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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

Vol. LXXIX. No. 24 NEW YORK AND CHICAGO, DECEMBER 11, 1924 { Per annum, $4.00 / Per Copy, 10 cents

Paper Mill Pumps

Pumps designed for handling water can not be converted to paper mill pumps by cutting the shrouds from the impellers and fixing them in the casings. Don't be fooled by such clumsy make shifts.

Stock pumps may be of the double suction or the single suction type. For the same capacity and head, the suction area must be approximately the same. Do you want the suction area halved, as it must be in the double suction type?

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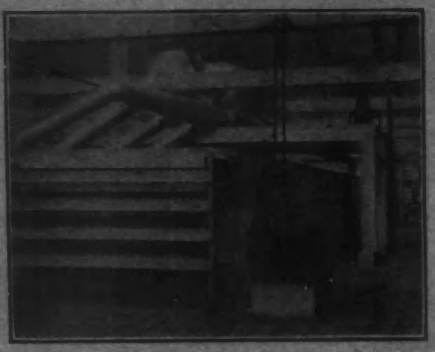
THE FREDERICK IRON & STEEL COMPANY
FREDERICK, MARYLAND

THE DOMINION ENGINEERING WORKS, LTD., Montreal, Canada
Sole manufacturers and representatives in Canada

Entered as Second-Class Matter June 20, 1879, at the New York Post Office, Under Act of Congress, March 3, 1879. — FIFTY-THIRD YEAR ESTABLISHED 1871 — Published Every Thursday by the Lockwood Trade Journal Co., 10 E. 39th Street, New York, N. Y.

COE ROLLER DRYER FOR BOARDS



Many paper manufacturers do not know that the demand for thick heavy paper and composition boards is increasing daily and will continue to do so. The COE Dryer for this work has now passed thru the experimental and development stages and is in use by the following concerns:

The Weber-Costello Company, Chicago Heights, Illinois
The Celotex Company, New Orleans, La.
Beaver Board Company, Buffalo, New York
United States Gypsum Co., Chicago, Illinois
American Cement Plaster Company, Fort Dodge, Ia.
Niagara Gypsum Company, Oakfield, New York
American Gypsum Company, Port Clinton, Ohio
Thames Board Mills, Limited, Purfleet, Essex, England.

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PAPER TRADE JOURNAL

ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

Published Every Thursday by the

LOCKWOOD TRADE JOURNAL CO., INC.

LESLIE R. PALME' PRESIDENT — GEO. S. MACDONALD VICE-PRESIDENT & TREAS — F. K. HOPPIE SECRETARY

10 EAST 39TH ST. N.Y. U. S. A

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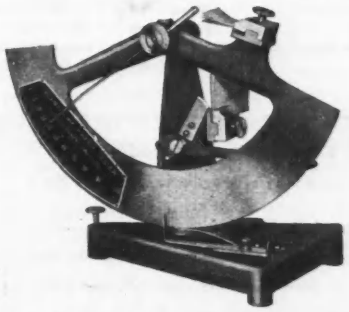

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One admirable feature of the new plant for Reg. N. Boxer Company is its well daylighted, ventilated interior. Design, construction and equipment by Austin.

The Algonquin Paper Company, Gouverneur, N. Y. Built by the Austin Company.

AUSTIN
ENGINEERING—BUILDING—EQUIPMENT

ESTABLISHED IN 1872

PAPER TRADE JOURNAL

Vol. LXXIX. No. 24 NEW YORK AND CHICAGO Thursday, December, 11, 1924

POWER SHOW ECLIPSED ITS TWO PREDECESSORS

Exposition Held All Last Week at Grand Central Palace Was of Unusual Interest Due to the Great Number of Exhibits Exemplifying Power and Mechanical Engineering in All Their Diversity—Some of the Notable Exhibits Which Proved of Particular Interest to the Paper Manufacturers Who Were Among the Attendants at the Exposition

The Third Annual Exposition of Power and Mechanical Engineering Equipment which was held at the Grand Central Palace during the past week far overshadowed in point of interest the previous expositions. Not only was this true in regard to the greater number of exhibits but it was also true in respect to their diversity. It was truly a representative exposition completely covering every conceivable phase of power and mechanical engineering.

The magnitude of the exhibit and the success that the annual power show is achieving is shown by the fact that the show which closed on Saturday was nearly three times as extensive as the first show which was held in December, 1922. Nor was the growth in interest manifested alone by the exhibitors. A wider interest was shown by the increased number of visitors, by the careful tour they made of the exhibition space and by their careful study of the exhibits which particularly interested them. It was an educational show even for those best informed on subjects of power and mechanical engineering.

Many New Developments

Manufacturers of machinery brought out their latest developments and many new machines were here exhibited for the first time. There was the best of opportunity to study the latest machines and devices of leading manufacturers and of meeting engineers and sales executives who in an intelligent manner could point out every new feature and answer all questions.

There were over 300 manufacturers represented and their exhibits occupied 150,000 square feet of floor space on three floors. The exhibits included power plant apparatus and accessories, power transmission machinery, materials handling equipment, heating ventilating and air conditioning apparatus, refrigerating machinery, machine tools and machine shop equipment.

The exposition also offered as a new feature a series of semi-technical lectures on such topics as the boiler room, steam prime movers, oil and gas engines, heating and ventilating, etc.

Lack of space prevents individual mention of all the exhibits but following is a record of some of those which were of particular interest to the visitor from the paper industry:—

Morse Chain Co.

By means of a rotoscope model the Morse Chain Company showed the operation of their silent chain drives with the novel "rocker-joint." This is the only chain joint consisting of two pins. The left hand pin in each joint is called the seat pin and the right hand pin the rocker. Each is fixed against movement in the link, eliminating motion at this point and thus forming the joint. The seat pin has a plane surface against which the edge of the rocker pin rolls or rocks when the chain goes on or off the sprockets. The joint is so designated that pressure due to the tension of driving, when on the straight run between sprockets, will be on the flat sides of both pins, brought together, holding the chain steady and true.

An auxiliary exhibit made the working of the rocker-joint even more vivid. This was in the form of a clock—the Grandfather clock type. In place of the face was a large rocker-joint which was set in action when the pendulum was set in motion and which continued to swing with each motion of the pendulum.

A velopticon was also used as an educational feature to show the various good points about the Morse chain, stressing in a vivid manner the striking points about the chain.

The company presented to visitors at the booth souvenir adding machines, and lead pencils.

Those who were in charge of the booth were: W. W. Bertrand and C. D. C. Crandell of the New York office, A. B. Wray of Ithaca, J. S. White of Boston, J. H. Meaney of Philadelphia, G. W. Pritchett of Charlotte, N. C.

Nash Engineering Co.

Prominent among the products shown by the Nash Engineering Company were the Nash Hytor Compressors for air and gas which are to be found included in many paper mill equipments. The principle of operation is a rotor which revolves freely in an elliptical casing filled with a liquid, usually water. This rotor is a casting, consisting of a series of chambers or spaces arranged around a cylindrical hub. As the chambers and water advance, the elliptical casing permits centrifugal force to throw the water out of the rotor, drawing in air or gas through inlet ports connected with the inlet of the pump. As the chambers advance the inlet ports are passed and the water is forced back into the rotor by the casing, gradually compressing the air. When the rotor spaces have reached the outlet ports, the air has been compressed to the terminal pressure and is then discharged completely by the reentering water. The rotor spaces are then full of water and ready to repeat the operation.

The exhibit also included the Nash Hytor Vacuum pumps, the Jennings Hytor Sewage Ejector and the Jennings Hytor Vacuum heating pumps.

President Irving C. Jennings was in charge of the exhibit.

Norma-Hoffmann Bearings Corp.

A complete display of their precision roller bearings was shown by the Norma-Hoffmann Bearings Corporation. These bearings are built to the highest standards of precision in both standard and self-

aligning types. They afford maximum service-ability under conditions involving heavy loads, shocks and vibration.

Much interest was drawn by the Minimeter, a precision measuring instrument which combines scientific exactness with commercial adaptability. It eliminates all personal error and permits measurements to be made with great rapidity. It is set by means of standards or gauge blocks, the pointer being brought to zero on the scale by the adjustment of the movable base at the lower end of the stand. The sample standard or gauge is then removed and the instrument is ready to measure parts and define on the scale the amount of error in manufacture. The Minimeter can be used in a variety of holders or mountings to adopt it to various phases of external or internal measurements.

Those who received visitors at the booth and gave them information were D. E. Batesole, F. N. Messenger and Norman Bell.

Foxboro Co., Inc.

The Foxboro Company, Inc., featured a water level gauge. An appreciable advantage of this is that the indicating dial gauge is brought down to the level of the fireman. It works on a differential U-tube pressure and records directly in inches the height of the water in the boiler. It has on it a special safety check valve to prevent the mercury from being blown out of the tube.

The company also showed a direct reading steam flow meter and a liquid low level gauge worked by compressed air, the principle being to measure the air pressure necessary to force air through an open pipe against the head of liquid. This air pressure is calculated in inches, feet, gallons or any other required measurement. The same principle was shown applied to a small indicating gauge, the air pressure being obtained from a small hand pump mounted near the gauge.

Another outstanding feature of this exhibit was a complete gauge board adopted to all specifications of power plant requirement.

Those who had charge of the booth were: D. B. Bristol, president of the sales corporation; C. E. Sullivan, sales manager; W. E. Booth, assistant sales manager; Mr. Reynolds, factory manager; Mr. Hatch, Boston sales manager; W. W. Patrick, New York, sales manager and also vice-president of the sales corporation; and Mr. Eshrich, Philadelphia sales manager.

The Bristol Co.

The Bristol Company showed a number of interesting recent developments. One was a three-wire long distance electric transmission system which is adaptable to any distance up to 20 miles and which is capable of all sorts of combinations.

A recording voltmeter was exhibited. It makes one revolution in fifteen minutes, the time being recorded. When the voltage goes below normal the mechanism calls a halt.

The exhibit also included all the automatic control devices, etc., which the company specializes in.

Those who had charge of the booth were: L. G. Bean and C. B. Hann of the Boston office, H. L. Young of Waterbury, Conn., C. E. Engle of Philadelphia, H. L. Griggs, general sales manager; C. W. Williamson, G. H. Gates and J. F. Inderdohnen of the New York office.

F. L. Smidth & Co.

Paper men were well entertained at the booth of F. L. Smidth & Co. for the exhibit there included the Lenix horizontal and vertical drives for beaters. These drives are designed to provide for that elasticity which is so essential for the success of Beater drives. With the Lenix drive the uneven stretch of the belts is taken up and used to increase the arc of contract on the motor pulley. The drive compensates for adjustment or movement of the beater shaft whether this is done by regulation or caused by impurities in the stock treated.

A steadily increasing number of paper mills are using the Lenix in connection with either individual or double headed motor drives. While the horizontal beater drive is and always has been the most commonly used there is also a growing demand for a vertical drive that would remove a good part of the belting and lineshafting from the beater floor. The vertical drive reduces to a minimum the danger of contamination of the stock. The first installation of Lenixes in connection with vertical beater drives was made in September 1916 at a New England paper mill producing a high grade of bond paper stock.

The exhibit also showed the Lenix short center belt drive. Messrs. Sahmeo, Salmonson, DeMarco and Clark were in charge of the booth.

The "S. C." Regulator Mfg. Co.

The paper industry found the exhibit of the "S.C." Regulator Manufacturing Company one which contained much of particular application to its needs.

The Type L.P. drainage control was shown. This is designed for low pressure drainage work and where the steam pressure ranges from one half pound up to fifty. This type is ideal for use on paper machines.

Feed water regulators, pump governors, constant discharge pressure governors, "S.C." balanced valves, vacuum pump governors, differential pressure valves, relief valves, regulating valves, etc., were shown.

J. M. Barrett and H. S. Fraser were in charge of the exhibit.

Vacuum Oil Co.

A booth that none of the paper men attending the exposition failed to visit was that of the Vacuum Oil Company for included in this display were every species of pulp and paper mill lubrication. An industrial booklet was taken away by all the paper men and will be carefully perused for it goes into the growth of the industry, deals with the importance of correct lubrication and gives valuable information on the selection of correct lubricants and their application to pulp making machinery, paper making machinery, power transmission, etc.

Those who had charge of this booth were: J. H. Burrill of the New York office, G. E. Houter and D. W. Wilkins.

Toledo Scale Co.

The Toledo Scale Company afforded visitors at the show a comprehensive idea of the magnitude of its business and the diversity of its products, for scales of practically every conceivable description were shown.

And yet the showing was not as complete as the chance observer might believe for there are more than 100 styles and types of Toledo scales. Among them are scales which weigh in terms of grains, others for handling loads ranging up to 30 tons; scales for general weighing, computing, counting, checking, testing, packing, mailing and for many special purposes.

The exhibit was one of great interest for no matter what a person's weighing problem might be, the exhibit contained a ready answer.

Buffalo Steam Pump Co.

Prominent in the exhibit of the Buffalo Steam Pump Company were various types of the company's boiler feed pumps and double suction single stage Class "S" centrifugal pumps. The latter embody all the latest and best features of centrifugal pump design. This type is built single stage only with horizontally divided casing and double suction impeller. They are made for capacities from 15 to 75,000 U. S. gallons per minute and for heads as high as 180 feet. They are especially designed for direct connection to motors and steam turbines and are also furnished for pulley drive.

Warren Webster & Co.

A heating exhibit of outstanding interest was shown at the space of Warren, Webster & Co.

A panel board used in the exhibit illustrated the apparatus used in the Webster Research Laboratories to visualize the operating conditions met with in various heating problems. Exhibition limitations made it impossible to show steam flowing through the apparatus

as in the Laboratory experiments and in actual practice but the air flowing through the exhibited apparatus produced the same visual mechanical effects as steam and for that reason the inspection of the action taking place in the glass tubes of the set was particularly interesting.

In the exhibition panel a glass bottle corresponded to the supply riser in a heating system. A glass tube represented the horizontal supply pipe and was so arranged that its grade might be varied. Another glass tube was the vertical supply connection to the radiator, the latter being equipped with a Webster Modulation Valve on its supply inlet and with a Webster Sylphon Trap on its outlet for returning condensation and air to the return piping.

The panel board was closely studied by many who thus obtained a very impressive idea of the Webster heating method.

General Electric Co.

The General Electric Company showed at its booth a representative assortment of their G-E Turbines, some of them massive creations and all of them exploiting masterly engineering construction. Among the products shown were mechanically driven turbines with reduction gear, alternating current motors and G-E electric steam generators.

The G-E turbines all boast the three essentials of a good steam turbine—simplicity, efficiency and reliability. The construction is simple, anything of a complicated nature having been avoided.

Experienced engineers were on hand to show visitors how the G-E electric steam generator makes it possible to maintain a steam supply sufficient for night and holiday demands without operating the main boiler plant. Utilizing as it does water power which would under ordinary circumstances be wasted, the Generator effects a substantial reduction in operating expenses.

The Crane Co.

The exhibit of the Crane Company lived up to it motto, "Everything for any pipe line." It included valves and fittings for all pressures and purposes. Among the equipment shown were the Crane "Y" stop-check valves for boilers, boiler feed piping, air compressors for all installations where an exceptionally high grade check valve is required and where the stop feature is also desirable.

The Crane Standard Clamp Gate Valves were also shown. These valves are used in oil fields, gas fields, mines, sugar plants, oil refineries, chemical plants, gas plants, benzol plants, smelters and, in fact, in all classes of manufacturing plants.

The Crane Double Disc Gate Valves were also exhibited. This extensive line completely covers the valve needs of the oil industry—in refineries, in oil and gas fields, in pump houses, on oil, gas and water lines. Around the double-disc type of construction have been built a great variety of styles, weights and sizes. Screwed and flanged ends, with rising and non-rising stems, in each of five weights, provide a valve which suits every working condition on oil, gas or water lines.

Wheeler Condenser and Engineering Co.

The booth of the Wheeler Condenser and Engineering Company was quite a center of interest throughout the show, the exhibit including a great number of devices, the mechanism of which was carefully studied by the visitors. The exhibit included jet air pumps, Crescent condenser tubes and pipes, pressure heated Hotwell pumps, etc.

Jenkins Bros., Ltd.

Jenkins Brothers, Ltd., had on display a very complete assortment of the Jenkins valves and bronze, iron and rubber fittings. The exhibit showed in a comprehensive manner the methods of Jenkins construction and the Jenkins standardized method of manufacture which aims to insure absolute interchangeability of parts. The Jenkins valves possess many points which result in a valve service which means economy in maintenance and all these points were explained by well informed and courteous attendants.

Classification of Printing and Wrapping Paper

WASHINGTON, D. C., December 10, 1924.—Judge McKenzie Moss, assistant secretary of the Treasury in charge of Customs, has sent communications to the appraiser of merchandise at Boston and Philadelphia in connection with the classification of printing paper coated on both sides and wrapping paper. In his letter to the appraiser at Boston Judge Moss says:

"The Department is in receipt of a letter from the Director of the Special Agency Service, inviting attention to a variance of opinion between your office and the appraiser at New York in the classification of merchandise described by you as printing paper coated on both sides, and which you returned for duty as printing paper under Paragraph 1301, whereas the appraiser at New York considers the paper to be properly dutiable as a coated paper at the rate of 5 cents per pound, plus 15 per centum ad valorem under Paragraph 1305 of the Tariff Act.

"You state that in returning the merchandise for duty under Paragraph 1301 you were governed by what you considered to be the principle underlying the decision of the Board of General Appraisers in T. D. 39816, which decision held that the provision for printing paper was more specific than that for coated paper.

"While the Board's decision relied upon by you related to an importation arriving in this country under the Tariff Act of 1913, the Department is of the opinion that there is no sufficient change in the phraseology of the corresponding paragraphs of the present tariff not to justify ignoring the Board's decision cited, and your advisory classification thereof is accordingly approved.

To the appraiser at Philadelphia regarding the matter of the wrapping paper imports he says:

"The Department is in receipt of a letter from the Customs Information Exchange, inviting attention to a variance in practice between your office and the appraiser at New York in the classification of merchandise which you report was invoiced as wrapping paper but which you classified as cardboard at the rate of 10 per centum ad valorem under Paragraph 1302 of the Tariff Act, your classification being predicated upon the fact that the paper is over 9/1000 of an inch in thickness, and that, as the proviso to Paragraph 1302 prescribes that any of the articles enumerated in the first part of the paragraph, less than 9/1000 of an inch in thickness, shall be deemed to be paper, conversely, anything 9/1000 or over is cardboard.

While the position taken by you is not without merit, the Department does not think that it necessarily follows that, because the proviso in 1302 prescribes that certain paper board less than 9/1000 of an inch in thickness shall be deemed paper, all paper 9/1000 of an inch or over is dutiable as paper board, and, as the appraiser at the port of New York reports that an investigation in the trade developed the fact that paper of the character represented by the samples submitted by you is known as wrapping paper, you are hereby directed to return such merchandise as wrapping paper, under Paragraph 1309 of the Tariff Act, to the end that there may be a judicial construction of the question.

What Is Standard News Print?

WASHINGTON, D. C., December 8, 1924.—The Board of General Appraisers in the case of the Crown, Willamette Paper Company has handed down the following decision:—

"Standard news print paper," as used in paragraph 1672 of the act of 1922, is a commercial term in which contemplates a certain paper containing given percentages of ground wood pulp and sulphite, with a weight of 32 pounds on the basis of 500 sheets, 24 by 36 inches in size, a basis which applies whether the paper is actually in sheets or in rolls. Although preponderantly used in printing newspapers, its commercial designation or status refers only to its quality or grade, and is in no sense controlled or affected by any other uses or by its width or dimensions. The word 'standard' applies solely to the quality or grade of the paper."

TIMBER LIMITS TRANSFERRED BY A MONTREAL SYNDICATE

Move is Made for the Benefit of Quebec Paper Mills, Ltd., Which Was Incorporated Last Week—Belgo Canadian Paper Co., Ltd., Places Comman Stock on Six Per Cent Dividend Basis—Issue of $2,600,000 Five Year Gold Notes of St. Maurice Paper Co., Ltd., Offered—Promoters and Lumbermen Adjust Differences Over Manitoba Mill Project—Price Brothers' Stock Issue.

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., December 8th, 1924.—Transfer of two thousand square miles on limits located along the Manicouagan River, on the North Shore, which had been leased by auction in November, 1923, to a syndicate represented by Frank Clarke, of the Gulf Pulp and Paper Company, and also acting president for the Rothermere interests, has been effected for the benefit of the Quebec Paper Mills, Ltd., which was incorporated also in the course of last week by provincial letters patent with a capital of $13,500,000. With Frank Clarke, who heads the new company, the promoters also include several attorneys of Montreal but the head office will be in Quebec. This transfer to the new company is preliminary to the construction by the same interests of the new pulp and paper mills within a few miles from Quebec as, according to the terms of the lease agreed to between the Government and the Clarke interests, the successful bidder for the Manicouagan limits had to erect a mill within eight miles of one of the eighteen cities of the province. This was the clause, which prevented in fact the Ontario Pulp and Paper Company which had also submitted a bid, from continued bidding when it was explained that its present mills at Manicouagan could not meet the requirements. In inserting the clause in the conditions of the lease, Premier Taschereau's object was to give work to residents of cities and thus relieve unemployment. As to the probability of the mills being erected near Quebec, this is evidenced by the fact that in the powers which have been given to the new company, provision is made that the company will develop and utilize powers for its operations in the counties of Quebec Centre, Quebec East, Quebec West, Portneuf, Chicoutimi, Champlain, Montmorency, Charlevoix and Saguenay. The Manicouagan limits in fact are contained within the last mentioned country. Work must be started at the latest in April to meet the requirements. Sillery, which is near the Canadian National lines, and St. Romuald, which also benefits from the same advantages, are mentioned as likely the choice of the company. At a short distance from the same point the St. Regis Pulp and Paper Company has completed its transactions with land owners to provide for the necessary ground to build mills also, so that within a few years the City of Quebec is to have within ten miles a very important pulp and paper industry, in which several million dollars will be engaged, and at least two thousand men will find employment.

Belgo Stock Dividends

The directors of the Belgo Canadian Paper Company, Limited, have announced that the common stock has been placed on the 6 per cent dividend basis and the first quarterly dividend at 1½ per cent has been declared payable January 10 to shareholders of record December 31. The dividend action is particularly interesting in connection with the present position of the company under Canadian ownership. Until June 30, 1923, it had been controlled by the original Belgian interests but at that time a financial group, acting with Hubert Biermans, purchased the property, elected Mr. Biermans as president, and started in on a program of extensions under which two news print machines were installed and the capacity of the plant increased from 200 to 380 tons daily. During the past year the company also purchased additional pulpwood limits, sufficient to provide a supply for about ten years. This was added to the previous 15,000 acres of timber limits owned outright and 1,800 square miles in the St. Maurice Valley. The company secures its power from the Shawinigan Water and Power Company nearby.

Financing of St. Maurice Paper Co.

A syndicate composed of The National City Company, Limited, Lee, Higginson & Co., and Aldred & Co., Ltd., is offering an issue of $2,600,000 five-year 5½ per cent gold notes of the St. Maurice Paper Company, Limited. The offering price is 98¾ and interest, New York funds, to yield about 5.80 per cent. The purpose of the issue is to repay the company in part for the cost of its two new news print machines and other capital expenditures made during the past few years. The capacity of the company upon completion of two additional news print machines, which are now being installed, will be as follows:

	Tons Daily
Groundwood Pulp	190
Sulphite Pulp	65
Kraft Pulp	65
News Print	250

Over 63 per cent of the outstanding capital stock of the St. Maurice Paper Company, Limited, is owned by the Union Bag and Paper Corporation.

Opposition to Manitoba Mill Settled

Promoters of the paper-making industry in Manitoba and lumbermen operating in the Lake Winnipeg district have happily composed their differences. This removes the one really serious objection to the proposed pulpwood concessions in the Lake Winnipeg district. It probably clears the way for the development of the pulpwood resources of the province and for the establishment of a $5,000,000 mill in the city of St. Boniface, by the McArthur interests.

Price Bros.' New Stock Issue

While minor details of the new issue of $7,000,000 Price Bros. preferred stock still await final settlement, some of the main features of the issue are now made available. The proceeds of the preferred stock underwriting will be used by the company to refund a portion of the cost of recent extensions to the Kenogami Mill, for development of the hydro-electric power plant at Chicoutimi, and to provide a portion of the cost of the new 200-ton news print mill now being constructed at St. Joseph d'Alma. Existing daily capacity of the company's paper mills is 550 tons of news print and 50 tons of cardboard and paper specialties. By about January 1, 1926, the daily output of news print will have been increased to 750 tons. The company is the fourth largest manufacturer of news print in the world. Annual lumber manufacturing capacity is 90,000,000 feet, board measure, including spruce lumber, shingles, laths and railroad ties. On May 14 of this year, there was established at the Kenogami Mill a world record in paper-making when one of the new Walmsley machines running at a constant speed of 770 feet per minute, lost only five minutes in 24 hours, and actually produced 106.6 tons of news print paper, against a possible 108.3 tons, or a rate of 98.4 per cent efficiency.

Wayagamack's New Development

At a special general meeting of the shareholders of the Wayagamack Pulp and Paper Company, hold at Three Rivers, Que., the plans for new development submitted by the directors, were approved unanimously. The proposals have in view the construction of a news print mill of a daily capacity of 200 tons with the necessary wood-grinding plant and other accessories. With this object in view, the directors were authorized:

1. To incorporate a new Company to be known as Wayagamack

(*Continued on page* 30)

MATHIESON System

Accuracy First

ACCURACY is the keynote in the design and operation of the Mathieson Multi-Unit Tank Car. Absolute accuracy in loading is the basic feature that creates all the other advantages of this car—maximum safety, economy and convenience in the transportation and use of Liquid Chlorine.

Upon the return of a Multi-Unit Car to our works, each of the fifteen one-ton containers is removed from the car and thoroughly cleaned, dried and inspected. The valves and fusible safety plugs are removed from each container and reset in our machine shop.

Each ton container is refilled while being individually weighed on a Toledo scale. To make doubly sure of the accuracy of the contents and of the tightness of the valves, all containers are allowed to stand for 24 hours after filling, until the Liquid Chlorine has adjusted itself to atmospheric temperature. A final inspection is then made and the weights rechecked before the containers are returned to the Multi-Unit Car.

Users of the Mathieson Multi-Unit Tank Car are assured of an even fifteen tons in each carload, each container an accurate measure of Liquid Chlorine, with none of the hazard due to possible overloading and with no shortages or uncertainty as to the quantity of material received.

The MATHIESON ALKALI WORKS *Inc.*
25 WEST 43rd STREET NEW YORK CITY
PHILADELPHIA PROVIDENCE CHICAGO CHARLOTTE

EAGLE THISTLE PRODUCTS

Deal Direct with the Manufacturer

Bicarbonate of Soda
Liquid Chlorine-Caustic Soda
Sesquicarbonate of Soda
Bleaching Powder-Soda Ash

SUPERINTENDENTS' MEETING HELD AT MIDDLETOWN, OHIO

Miami Valley Division of the American Pulp and Paper Mill Superintendents' Association Listens to Interesting Talk on "Electric Drives on Paper Machines" by R. N. Norris, of the Harland Engineering Co.—R. W. Jenkins, of Ohio State University, Reports on Progress of Vocational Educational Work Among the Paper Mill of the Miami Valley—Next Meeting to Be Held in Dayton.

[FROM OUR REGULAR CORRESPONDENT.]

MIDDLETOWN, Ohio, Dec. 5.—The monthly meeting of the Miami Valley Division of the American Pulp and Paper Mill Superintendents' Association was held at the Manchester Hotel on Saturday evening, November 29, Chairman Lloyd T. Murphy presiding, with about 50 members and guests present.

Report an Vocational Education

R. W. Jenkins of Ohio State University, who is on the committee of Vocational Education, made a brief report on their work, which is progressing very satisfactorily. Some classes have already started in Miami Valley, and others are forming and will be started during the month of December. Foreman's classes are also being started in many of the mills and the outlook is very encouraging.

Electric Drive for Paper Machines

R. N. Norris of the Harland Engineering Company was present and gave a very interesting talk on the subject of "Electric Drives on Paper Machines." He illustrated his remarks with lantern slides.

He went into detail on many of the features, and others were explained in passing. Among the points brought out, Mr. Norris stated that in one change from the old way of driving to the electrical way the even speed of the machine has been maintained. The installation made on one machine in 1914 with a speed range of 10 to 1 has never been changed to this time. There are two motors on dryers, one motor on other section, motor on calendars and one on winder.

There is no desirable feature obtainable by a mechanical drive that cannot be achieved by the electric drive. There are many desirable features obtained that no mechanical drive can give nearly so well, or at all.

With this speed interlock, as Mr. Norris termed his system, the speed is constant, with simple readjustments, and with perfect speed control, which is very reliable. One of the points he brought out along this line was, with belt drives on flat face pulleys the usual allowance for stretch and slip on full load is 3 per cent, while with cone pulley a higher slip is expected. The slip on a belt decreases with decreasing load, and *vice versa*. To take a conservative estimate, assume that the machine is running with 2 per cent belt slip and 1 per cent draw between two sections, and that the load on one section increases 25 per cent. In that event the slip will increase 25 per cent, and the draw, which was 1 per cent, becomes 1½ per cent or increased 50 per cent. This is one of the causes of the sheet not being uniform in strength, and in many cases is the cause of breaks, which means loss of production.

Another big factor in the electric drive is the safety of the employees, who are at times placed in many dangerous places with the mechanical drive, to make a temporary repair or some adjustment while the machine is running. He cited one case where a life had been saved, when an operator slippd and his boot passed in between the press rolls, the motor overload tripped and he escaped with but slight injury to his foot.

In the electric drives the elimination of friction clutches, pulleys, belts or ropes used in the drive, line shafts in basement and on machine floor, together with a very large amount of floor space, is quite a big item of expense, to say nothing of the cleanliness that is maintained about the machine by the use of the electric drive.

Complete independent control is secured by the fact that each section is driven by its own motor. Each motor is provided with a switch by means of which the machine men can cut out that part without interfering with the other parts of the machine.

Motors can be placed either inside or outside of the machine room. Those placed inside of the machine room are ventilated, and are of waterproof type, while those placed outside of the machine room can be of semi-enclosed type.

Along the line of upkeep, Mr. Norris stated that it was a small item compared with the items of belting, rope, gears and many other items that are necessary on mechanical driven plants. Contacts, brushes like parts of the motors are the small items that enter into the electrical drives.

He also stated that the life of the wires, felts, etc., on the machines have shown longer life, as the speed is steady at all times, and the draw is steady at all times.

After Mr. Norris completed his talk, many questions were put to him by various members, which proved a very interesting discussion.

New Members Enrolled

William MacGregor of the Bemis Bag Company, Peoria, Ill., and Mr. Field of the Cheny Pulp and Paper Company at Franklin, Ohio, were enrolled as members, while W. F. McClellan was transferred from the Connecticut Valley Division. He is now connected with the Auglaize Box Board Company at St. Mary's, Ohio.

Next Meeting at Dayton

The next meeting will be held on the second Saturday in January, as it was deemed best to suspend the December meeting on account of the Christmas holidays. This meeting will be held in Dayton, Ohio, and the subject for the evening will be upon Rubber Covered Rolls, which will be led by a representative of one of the large Eastern mills. H. G. Funsett of the Hager Strawboard and Paper Company and Herbert W. Server of the Miami Paper Company were named on the committee for arrangements. Homer C. Ferguson, first vice chairman, will head the committee on arrangements of speaker and program for the evening.

J. A. Krebs and Mr. Sperling of the Hammermill Paper Company at Erie, Pa., were among the members present from a distance.

TIMBER LIMITS TRANSFERRED

(*Continued from page 28*)

News, Limited, and the capital stock of which will be owned and controlled by the parent Company.

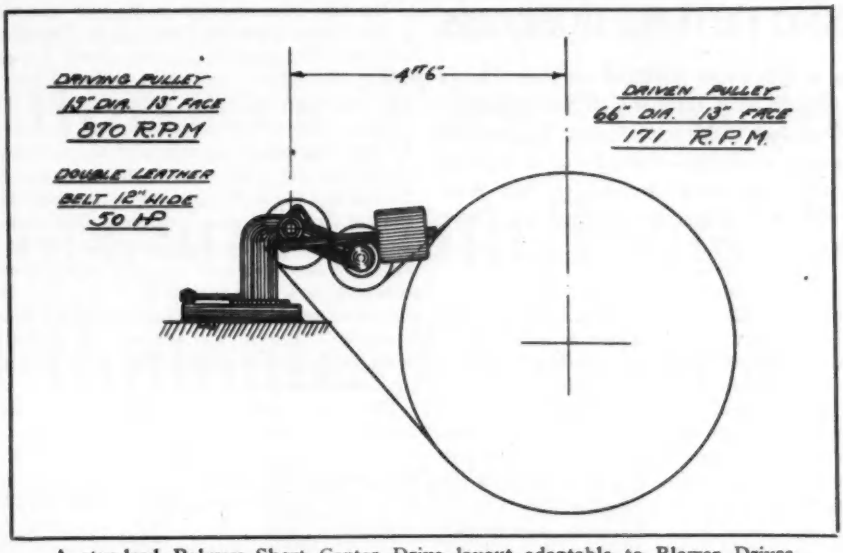
2. To sell a portion of the Company's vacant land on Wayagamack Island on which the new mill, plant, etc., will be erected and equipped.

3. To create and issue $1,500,000 6½ per cent gold bonds, these to be secured by a General Mortgage on the Company's property, ranking after its present bonded debt, and also by the deposit with the Trustee of an equal amount of General Mortgage bonds of the new Company.

4. To extend the corporate powers of the Company to include such other and additional objects as may be necessary for the above purposes and to obtain supplementary letters patent confirmatory thereof.

A meeting of the Board of Directors was held immediately afterwards at which were initiated the requisite steps to be taken in this connection.

It is understood that the program just ratified will be carried out with all speed and that the construction work will be started early next spring.



A standard Pulmax Short Center Drive layout adaptable to Blower Drives, Small Rolling Mills, Beater Drives, Compressor Drives, Line Shaft Drives, Toggle Press Drives, etc.

A New and Better Way to Transmit Power

The open drive, the chain drive and the direct connected drive have met a new and worthy rival. It is

Pulmax Short Center Drive

It actually transmits more power than an equivalent open drive. You can forget about belt stretch, belt tension, belt slippage, bearing pressure, direction of drive and pulley ratio.

Pulmax Short Center Drive is as economical of floor space as a chain or direct connected drive and, in addition, it is more flexible and resilient. It more easily accommodates itself to change in load conditions. Also it is much less expensive.

Pulmax Short Center Drive combines the advantages of the older types of drives and it overcomes their drawbacks.

Hundreds of installations in all kinds of mills on all types of equipment prove its merit. We should like to send you a copy of the Pulmax Drive Catalog.

BIRD MACHINE COMPANY

Pulmax Drive Division

SOUTH WALPOLE MASSACHUSETTS

Pulmax Dealers: *Himmelein & Bailey, Inc., Philadelphia; R. R. Street & Co., Chicago; Transmission & Belting Co., Pittsburgh; Cleveland Tool & Supply Co., Cleveland; Buffalo Mill Supply Co., Buffalo; Teuscher Pulley & Belting Co., St. Louis.*

Pulmax Drive

REG. U. S. PAT. OFF. 7305

CHICAGO TRADE CONFIDENT REGARDING FUTURE BUSINESS

Everything Points to a Quickening Demand as Year Draws Toward Close—Board and Container Call Shows Marked Improvement—Consumer Takings of Coarse Papers Undergoes Something of a Decline—Sales Force of Pilcher-Hamilton Co. Holds Final Sales Luncheon of Year With R. B. Harbison, Western Manager of International Paper Co., Inc., as Speaker.

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, Ill., December 8, 1924.—Fundamentally, business conditions in the paper industry are sound, indicate a healthy tone throughout and point to a quickened demand at the turn of the year.

In writing grades a strong demand is looked for within the next two or three months. Even a six-months' period is safely assured. Again it is the contention that with more prosperity for business in general, more letters will be written and advertising employed more generously which in turn will reflect in higher sales totals for those handling these products. Coated papers likewise will come in for its proper share of this trade. Mills at present could handle more tonnage having but two weeks supply of orders on hand and running at about 80 per cent. of normal. There will in all probability be no noticeable change in this condition between now and early January but it is pretty certain to be overcome then.

Merchants Buy Coarse Paper; Trade Slower

While it is reported that some merchants of coarse paper are buying quite regularly from their mill connections, yet there has been some decline in consumer takings. Once more the responsibility is shifted to inventory period. The condition is by no means alarming, being only what is expected for December.

Small consumers are said to be well taken care of for holiday stocks, although a number of them buy from hand to mouth. They are able to do this because of the service facilities made available to them by the merchants. Some industrial buyers are absent from the market, particularly clothing and shoe producers. The former especially, have slackened activity considerably. The reason for this is not apparent inasmuch as they should now be working on Spring and Summer productions. The shoe industry likewise presents a problem that is not easily understood nor quickly remedied. Both wrappings and tissues are taken by these industries and their departure from the market makes a difference in paper merchants sales.

Improvement in Boards and Containers

Of late there has been further improvement in the board and container market. Whereas manila line chip was the spectacle for a few weeks, plain chip is now moving along at an equally interesting pace. Reports are to the effect that inquiries are coming in for plain chip board quite frequently even for sizeable orders. Further than that, the mills are said to be running very close to normal capacity. This forward movement was anticipated by board and container factors and, of course, did not come unsuspected upon the paper stock folks. They looked forward to it with much anticipation and that is one reason why prices of paper stock have advanced to present figures. Stocks also are fairly well built up to a point where they can handle some good orders.

Container liner has strengthened considerably in price and an advance of $2.50 per ton on 85 and 100 test is predicted within the next few weeks. This should be before the first of the new year. It is reported by one member of the trade that an effort is being made to quote prices on containers at the delivered price, rather than f. o. b. mill. The first is about four or five dollars higher per ton than the f. o. b. mill quotation, the difference being the freight rate.

Hold Last Luncheon Meeting of Year

The final sales luncheon of the year was held by the sales force of the Pilcher-Hamilton Company, on Thursday, December 4, at the temporary headquarters of the Union League Club on Monroe street. The affair came off in typical Pilcher-Hamilton style and the usual good fellowship prevailed. Sales Manager E. A. Hall, Jr., said a few words in greeting and made several announcements. Among other things, he expressed his appreciation to everyone who had in any way contributed to the success of these sales luncheons. He thanked the trade press for its representation at these meetings and the reports of them published. The Chicago representative of the PAPER TRADE JOURNAL was in attendance by special request. Mr. Hall also welcomed two new paper salesmen to the Pilcher-Hamilton staff. The first is A. C. Taylor, who was formerly with the Cleveland-Akron Bag Company, of Cleveland, Ohio. The other is David E. Hirsch, who was associated with the Tarentum Paper Mills of Chicago, for several years. The latter firm handle wrapping papers and rope.

The speaker of the occasion was R. B. Harbison, western manager for the International Paper Company, Inc., of New York. Mr. Harbison has his headquarters in Chicago. Mr. Harbison gave an enlightening talk. He traced the development of the paper industry from the Revolutionary period when there was hardly enough paper in the country to wad the guns, to the present when there is an average of 150 pounds of paper per person consumed each year in the industry. He related the history of this company and pointed out that its existence covered the last period of 26 years during which the greatest strides in paper consumption have been made. He spoke of the firm's marketing policies and named over the vast number of paper products manufactured.

At the conclusion of Mr. Harbison's talk a number of questions were shot at him by those listening previously. Copies of Bookan-Wrap, the company house organ, had been distributed and Mr. Harbison paid a glowing tribute to it and those responsible for its appearance. It was the Christmas Number, printed in red and green. A special front cover design had been drawn by an artist and altogether, the organ had the appearance of a popular weekly of the day. Much credit is due Henry W. Borchardt, Bookan-Wrap's editor and Mr. Hall, who also did considerable work on the issue.

At the conclusion of the meeting, Mr. Hall called upon Robert E. Casey, country salesman of Pilcher-Hamilton Company for a few words. Mr. Hirsch also responded to Mr. Hall's invitation to speak briefly. R. C. Johnson, salesman for the International Paper Company, who handles the Pilcher-Hamilton account for his firm, was also present and answered a number of question for the salesmen.

Celebrate Wedding Anniversary

Mr. and Mrs. W. Philip McNulty will celebrate their second wedding anniversary with a party at the South Shore Country Club, Saturday evening, December 6, 1924.

New Jones Catalogue

The W. A. Jones Foundry and Machine Company, Chicago has just issued two new catalogues of which the company will be glad to send copies to interested persons. The new catalogues are as follows:

Catalog No. 31.—JONES POWER TRANSMISSION MACHINERY.—Covers shaft hangers, pillow blocks, couplings, collars, belt tighteners, mule stands, bench legs, etc.; all items are well illustrated, listed, dimensioned, tabulated, etc. The very latest data on a completely rounded out line of quality transmission appliance.

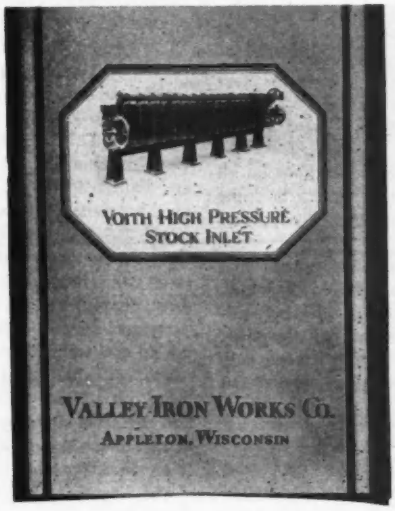
Catalog No. 32.—JONES SPROCKET WHEELS AND CHAIN BELTING.—Covers a full line of sprocket wheels and chain belting, as well as chain tighteners, elevator boots, buckets, bolts, hand wheels, etc., illustrations, listing prices and complete specifications on all items shown.

It Improves Paper Formation Lumps and Foam Spots Vanish It Eliminates Uneven Caliper

MILLS that have installed it are calling it the biggest recent development in paper manufacture. Not only does it result in better paper, but many mills report at least a *ten per-cent increase in production* as well—better paper at a lower cost.

It is called The Voith High Pressure Stock Inlet and it feeds the stock to the wire of a Fourdrinier machine, at the breast roll, *at any speed desired.*

The stock is fed onto the wire in an even jet, minute adjustments, easily and quickly made, result in a sheet of *uniform caliper* across the entire width of the machine. No aprons or slices are required. *All* of the wire is used for formation purposes. Lumps and foam spots are eliminated.



Write for this booklet today.

During the past two weeks eight Voith Inlets have been ordered *and four of them were repeat orders.* The booklet pictured on this page will give you full particulars about this new machine and about the results obtained with installations on Fourdriniers making many different kinds of paper. Write for your copy today.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Ave.

TORONTO PAPER BUSINESS CONTINUES A TRIFLE DULL

Coated Paper Mills Are Busier Than for Months—Paper Distributors Issue a New Long Price List—Dominion Envelope and Carton Co. Purchase Rudolph Paper Co.—Dryden Paper Co. Plant at Dryden Resumes Operating—Questions of Law Considered in Removal of Pulpwood Case and Ownership of Lands Becomes Involved—Notes and Jottings of the Industry.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., December 8, 1924.—Business in the paper line still continues rather dull and trade has not picked up to the extent that was expected. Coated paper plants have been favored with several nice orders of late and the mills are busier than they have been for some months. The paper distributors have issued a new long price list, which will remain in effect although one large Toronto concern maintains that it will sell on a net price list in spite of the objections raised by a number of leading printers. The new long list, which has just been published, is based on the prices received from the mills. Some advances are shown, the increase being one and one half cents on all No. 1 bonds and ledgers and one cent on No. 2 grades, with a slight advance on the readjustments through other grades.

As stated last week, the producers advanced the quotations on all book papers to jobbers one quarter of a cent, which is half the reduction that was put in operation some months ago. The jobbers have adjusted their lists accordingly.

The market for pulp is getting better and it is understood that the Kipawa plant of the Riordon Company is sold up to within two hundred and fifty tons of its monthly output of bleached sulphite pulp. There are not as many bargains in the pulp line just now as there have been in the past few weeks. Ground wood pulp is bringing from $30 to $32 at the mill; sulphite, bleached, $80 and unbleached from $60 to $65 a ton.

Jobbers Not Buying Freely

The majority of jobbers are not buying supplies very freely now as they are anxious to keep down paper stocks until after the annual inventory period which will take place at the close of the year. The year has had its ups and downs and some months have shown a considerable increment over corresponding periods of 1923, but, in other months, there has been a decrease and it is doubtful if the volume on the whole will be as great when the books of 1924 are closed.

Collections have improved somewhat but credits still have to be watched very closely and all buying continues only as required. It has been impossible to get customers to anticipate their wants and order in large quantities.

The trade is looking for much better things during the coming twelve months. Every condition, which has been laid down in advance as essential to lasting trade recovery, has now been fulfilled and practically every obstacle which has been recognized as impeding such recovery, has been removed. If the volume is not forthcoming there will be keen disappointment although the paper industry has come through the past year with less casualties than many allied lines but it has been accomplished only by care, foresight, cooperation and better working arrangements and understanding with the mills.

Toronto Company Is Expanding

The Dominion Envelope and Carton Company, Toronto, has purchased the business of the Rudolph Paper Company, New York city. This company manufactures waxed papers and the plant will be removed to Toronto and housed in a new building which the Dominion Envelope and Carton Company is erecting on property adjoining its present premises. The equipment from New York will be used in connection with the carton and specialty bag department of the Dominion Company.

Dryden Paper Company's Operations

The plant of the Dryden Paper Company, at Dryden, Ont., which was closed down for some time, is now operating but is still under the receivership which was established in the fall of 1923. The market for kraft pulp at present is very good and higher prices are ruling than last year at this time. The sheathing paper business has during the last few months been rather poor but is now showing signs of recovery while the call for wrapping papers in the western provinces is much improved, due largely to the seasonal demand for this grade of paper. The company is now selling its entire production of wrapping papers and has in addition reduced its stocks considerably. The Dryden Company is well supplied with pulp wood for the coming season but is not operating any camps of its own this winter and is buying in the neighborhood of six thousand cords.

Who Owns Pulpwood Lands?

Mr. Justice Wright, Toronto, heard arguments on certain questions of law relative to the action brought by the New Ontario Colonization Company, Limited, against the King, respecting the cancellation of an agreement under which the predecessors of the Colonization Company were granted the exclusive right to remove the pulp wood and timber from the townships of Haggart and Kendry. This agreement was made in 1912 between the government of Ontario and Willis K. Jackson, William A. Rushworth and Ernest S. Wigle. The purchasers paid $88,364 in consideration of the privileges granted. The purchasers assigned the agreement to the New Ontario Colonization Company and in September, 1921, the company was notified by the Ontario government that the agreement would be terminated on May 1, 1922. In its action, the company claims that it was relieved from failure to carry out the agreement by "impossibility of performance." It contends that, owing to the war, it was unable to procure steamship transportation, which, with restricted European immigration, made it impossible to bring out settlers. Alleging that it spent $18,116 in road construction, the company sues for (1) all moneys with interest expended in the undertaking (2) in the alternative, the value of the townships, $425,000 and, failing this, (3) moneys paid in consideration of the townships and expended by the suppliants in improvements. Reserving judgment, Justice Wright questioned whether the company could fall down on its obligations for four or five years and claim to be able to redeem itself in the following years as the agreement called for a certain number of settlers each year.

Notes and Jottings of the Industry

Charles F. Buss, of Thorold, Ont., general superintendent of the mills of the Provincial Paper Mills, was a business visitor to Toronto lately.

John Hewitt, President of Paper Sales, Limited, Toronto, was in New York last week attending the funeral of Oscar Seitz, President of the Arabol Mfg. Company of Canada, whose plant is located at Brampton. The late Mr. Seitz was a frequent visitor to Toronto.

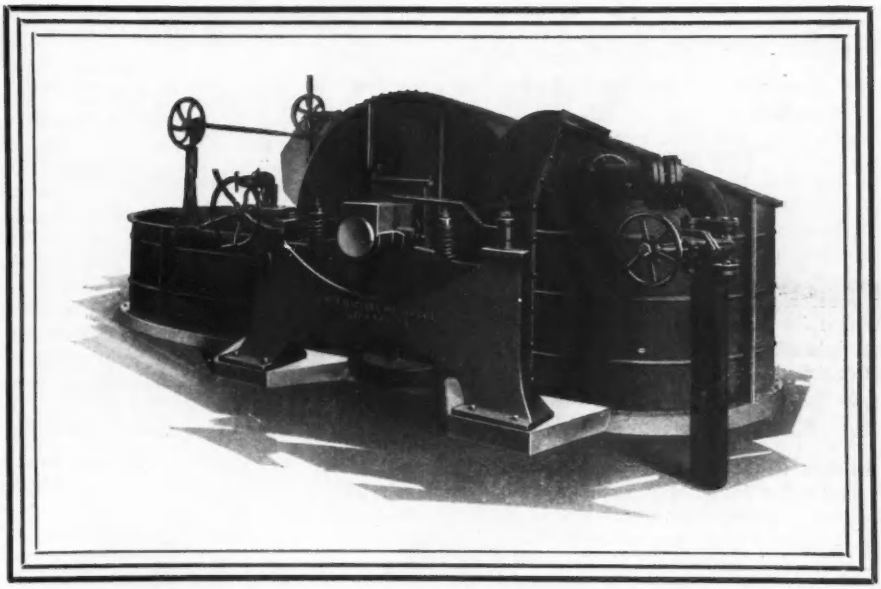
The regular quarterly meeting of the Provincial Paper Mills Company was held at the head office in Toronto last week. Among the directors in attendance were A. B. Connable, S. B. Munroe, C. E. Dewing and C. S. Campbell, of Kalamazoo, Mich.

C. Dewolf Reid of Montreal, representing the Western Quebec Paper Mills, St. Andrews East, Quebec, was a business visitor to the Toronto trade recently.

W. J. Trimble, of Toronto, has been awarded the contract of repairing the bag room of the Lincoln Mill at Merritton, Ont., which was damaged by the explosion of the boiler some time ago. During reconstruction the output of the plant will not be interfered with.

Dilts

"Your paper is made in the beaters"



New Dilts Beater brings the Hollander Engine Up-to-date

THE new Dilts Beating Engine shown above—

Circulates the stock more than 100% faster and handles densities up to 8% dry.

Mixes the stock quicker and more thoroughly.

Beats the fibre evenly and uniformly.

Power is no more than required by ordinary beaters. Roll speed is not increased nor is the stock lifted over a high backfall.

Seven of these new Beaters are now installed and giving remarkable results.

You know how satisfactory are our present beaters. This new type of beater is even better than our best. Write us.

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

EXPORT OFFICE ~15 PARK ROW~ NEW YORK CITY

BETTER FEELING PREVAILS IN THE PHILADELPHIA TRADE

Decided Improvement Noted in Practically Every Line While Seasonal Demand is Especially Good—Thomas M. Royal & Co. Find it Expedient to Continue Operation of Both of Its Plants—Wrapping Paper Men Are Optimistic of the Paper Outlook—Curtis & Brothers Making Improvements at Their Mills—Hinde and Dauche Paper Co. Expand Their Mills.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., December 8, 1924.—With the paper distribution in the Philadelphia territory gradually broadening in scope there has developed a better feeling among the dealers as to the outlook for the trade with the coming of the new year. While the seasonal demand for many of the grades of both fine and coarse papers predominates the market there nevertheless is a decided improvement for the standard year round lines used in the manufacturing industries and in the accounting departments which gives evidence that the commercial world is preparing to resume business on a more active basis than has been the case in the past year.

The upward swing in the fine paper division is steadily reaching heights of a most encouraging nature. All along the line from the writings to the larger broadsides there is a growing market with freer orders for quantity purchases. While the large printers, publishers and advertising concerns are the chief channels through which the present stocks are flowing to the consuming trade there has been a noted improvement for the writing papers used in the stationery and smaller printing establishments doing job work on a limited scale.

Coarse Papers Improve

Krafts and specialties are the prime factors in the seasonal holiday markets in the coarse paper divisions and while there is a broadening demand among the manufacturing trades the department stores and mercantile establishments are consuming the larger portion of shipments from the paper warehouses. Prices of Krafts are holding firmly around the quotations of the past six weeks with No. 1 selling at 5¾ to 6½ cents while No. 2 is quoted at 5 cents F. O. B. from the mills. Clasped, opened, parcel post and catalogue envelopes for the circulation of advertising and holiday merchandise are very active just at this time for the issuance of annual reports, New Year advertising matter, catalogues and mailing of small materials that are sent through the postal service.

The open weather has been inducive to the continuance of activity in the building trades and the reflection of the extended season in the building paper markets has been materially helpful in promoting the sales of building and roofing papers with prices fairly well maintained.

Royal Co. Maintains Two Plants

Because of the tremendous growth of Thomas M. Royal & Co., bag manufacturers, the company has found it expedient to continue operation of both its plants. The original plan of the company was to abandon the old manufacturing quarters at Bryn Mawr, Pa., upon the acquisition last July of the new home at 7th and Grange streets with its 700,000 square feet of space. At that time it was anticipated that the large modern structure recently constructed by the Fox Motor Company would be sufficient to meet its needs in building and plant capacity. However, the rapidly growing business necessitated the additional facilities and the company decided to keep its old quarters as a branch factory. While the new quarters with its seven carload siding, the daily output of the Grange street plant, is the largest bag plant in this State, the old quarters in Bryn Mawr also covered a considerable area. It long was the main factory of the company which has been in existence for more than 28 years and was devoted to the production of a complete line of grades and types of plain and printed bags. When the company removed to the new location last summer announcement was made of the fact that it had taken over the distribution in this country of the bags manufactured by the well known British producers and printers, the E. S. and A. Robinson, Ltd., Bristol, England, with whom the Royal Company had become associated. President Thomas M. Royal of the company who has been sojourning for the past four months in Europe has again returned to his desk.

Coarse Paper Division Meets

Optimism as to the future of the coarse paper business was freely expressed in the discussions of the members of the Wrapping Paper Division of the Philadelphia Paper Trade Association at the meeting of that body held at the Bourse during the week. With representative Peck of the wrapping paper department of the Paper House of Pennsylvania presiding as chairman, the members discussed the present business trend in an open forum. There was unanimous opinion that the industry had taken a turn for the upward swing with present indications pointing towards a firmer market and the prospects of a slightly higher price trend after the first of the year. The Membership Committee through its Chairman Harvey N. Hearl, of the Quaker City Paper Company, reported that the membership campaign instituted at the last meeting had made progress and that its results would be made known at the next gathering of the Division in the Bourse on December 18.

Federal Reserve Bank Statistics

The ratios of increase of the sales of paper in the wholesale distribution as compiled by the Federal Reserve Bank for the Third or Philadelphia District, issued in its December report, shows the following:

Sales during October were 17.6 per cent larger than those of September and 1.0 per cent greater than those of October, 1923. Stocks held by distributors at the close of October were 6.2 per cent larger than at the end of September and 14.8 per cent greater than at the close of October, 1923. The ratio of accounts outstanding to sales decreased from 157.5 in September to 143.5 in October.

Curtis & Brothers Improve Mills

An entire new boiler system has been installed in the Nonantum Mills of Curtis and Brothers, whose local headquarters are located at 14 and 16 S. 5th street. The Nonantum Mills situated in Newark, Del., on White Clay Creek produce Writings, offset, envelopes, rag books, covers and specialties with a capacity of 25,000 pounds per day. In equipping the mill with the new boiler system there has been provided four modern type boilers manufactured by the Lebanon Iron Works. While there will be continuous use of three of the boilers there has been installed an extra one for emergency occasions. In addition to the four new power equipment the mills also are supplied with water forces for motivation from the creek giving ample sources for continual mechanical operation and production. Curtis and Brothers have just completed the preparation of new sample books showing the various grades manufactured and stock sizes.

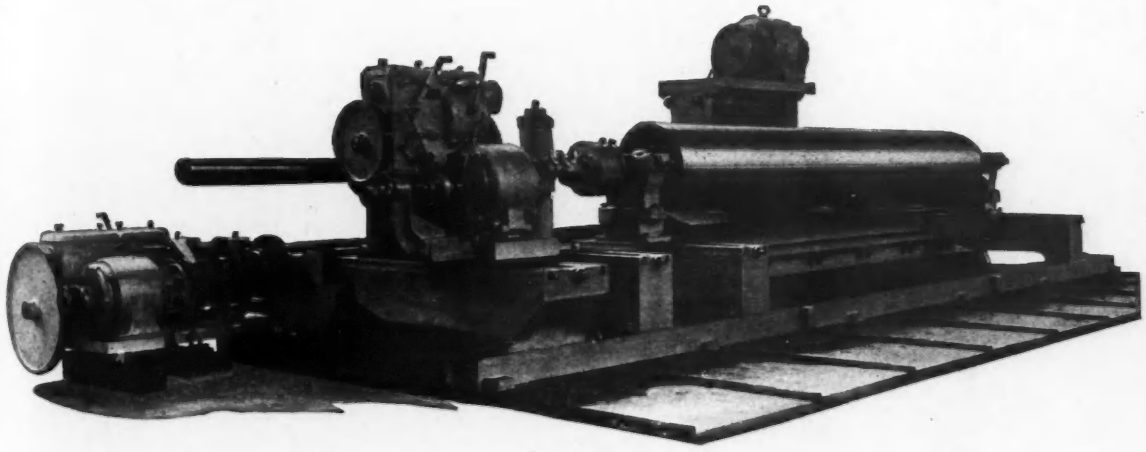
Hinde and Dauche Expand Mills

Through the construction of additional building facilities the Hinde and Dauche Paper Company, with local offices in the Drexel Building, has been able to increase production in the Gloucester Mills 50 per cent. A few years ago the company built its own board mills in the New Jersey city. These buildings are now being extended to double the former size. The group of structures comprising the mill property, which come under the extension plans, are the machine rooms, warehouses and stock storage building. The mechanical equipment also is being developed through the installation of more units providing for the increase of liner boards production in considerable tonnage quantities. Most of the new units

(Continued on page 38)

Charles Walmsley & Co. (CANADA) LIMITED

ARMSTRONG-WALMSLEY ROLL GRINDER



Built in sizes to take rolls up to 240 inch face and up to 6 ft. 6 inches in diameter.

A Tool of Precision and Beautiful Workmanship.

Built by master tool builders, it has the correct weight and balance to eliminate vibration.

A True British Achievement.

WORKS:
Longueuil, Que.

OFFICE:
Montreal, Que.

New York Trade Jottings

B. W. Scribner, chief of the paper section of the Bureau of Standards, Washington, D. C., was a trade visitor here last week.

* * *

W. H. Savery, president of the Harper's Ferry Paper Company, Harper's Ferry, West Virginia, is in New York on a business visit.

* * *

Robson Black, president of the Canadian Forestry Association, Ottawa, Canada, has been spending the week here. He will speak at the Canadian Club next Saturday afternoon.

* * *

An interesting illustrated article by Secretary R. S. Kellogg of the News Print Service Bureau entitled "A Paper Age," appears in the December number of American Forests and Forest Life, the magazine of the American Forestry Association.

* * *

The New York Forest Club had an informal luncheon at 12.30 yesterday at the Civic Club, 14 West 12th street. Colonel W. B. Greeley, Chief of the United States Forestry Service, was the speaker and gave an extremely interesting talk on the forestry problem of the United States.

* * *

The executive committee of the American Waxed Paper Association is meeting today at the Canadian Club and an all day meeting will be held tomorrow at the Hotel McAlpin. There will be an address by W. L. Churchill, an industrial engineer, and reports will be made by the committees on costs, research and cooperative advertising.

* * *

Executive Secretary Dr. Hugh P. Baker of the American Paper and Pulp Association and Assistant Secretary Porter are now busy formulating their plans for a Forestry Day program for Wednesday, February 4, at the Waldorf and this is expected to be one of the interesting features of convention week. There will be an entire day's discussion of the Woods end of the industry, fire prevention, logging and every conceivable phase of forestry being touched. The Woodland section will have meetings in the morning and the afternoon with a dinner at night.

* * *

George K. Gibson of Chicago, former president of the Salesmen's Association, addressed the salesmen on Monday at their weekly luncheon at Hotel Belmont. He gave a talk on the business conditions in the Middle West. He expects a considerable improvement in business after the first of the year. General reports from those present showed that a slowing off of paper business is expected during the holidays to be followed by a greater volume of business after January 1. There was a further discussion of plans for convention week. The salesmen will have two well known speakers on business topics for their meeting on February 3. The banquet in the evening will have as speakers Edgar A. Guest, the poet, and a nationally known business man.

* * *

Dr. C. A. Schenck and wife of Darnstadt, Germany, arrived in New York on Sunday on the Veendam for a four weeks' stay in this country. Dr. Schenck will deliver a number of lectures on forestry while here. He is a noted authority on all forestry subjects and for twenty years prior to 1914 he carried out practical measures in forest planting, forest management and forest utilization in the administration of the Biltmore Forest, in this country. There is probably no man with a more complete knowledge of forest conditions and forest utilization in Europe and America than Dr. Schenck. He is also the author of "Forest Utilization in Europe" which is published by the News Print Service Bureau and for which there has been a very flattering demand.

IMPROVEMENT IN PHILADELPHIA

(*Continued from page 36*)

are added to the old and will provide not only for increased production but the modernizing of the mechanical equipment for speedier service. The Hinde and Dauche Company is disposing of its board products to the trade as well as for its own use. The Superintendent of the Gloucester Mills is V. H. Wendt who has been connected with the Company for 15 years and who is the father of the local manager Charles Wendt, in charge of the Philadelphia sales offices. Under the direction of Superintendent Wendt the Gloucester Mills have been extensively developed into one of the leading Jersey Liner Board manufacturing concerns. It previously produced 40,000 pounds per day of bogus and felt papers and 70,000 pounds of liner board.

McDowell Mills Modernized

Through the equipment of the mechanical department with another electrical driven Turbine and Generator the McDowell Mills in the Manayunk District are now assured of sufficient power to meet any emergency occasioned by the fluctuations of the water sources upon which it previously depended for operation. With the installation of the second of these Turbines of 1,000 horse power and a direct connection application, the mill is provided with ample facilities to keep operation at full speed and to offset power shortage in event of high or low water range in the Schuylkill River. With the completion of the installations and the opening up of the two Turbine power, the mills were placed on full time operation producing No. 1 and No. 2 glassines and grease proof papers, water and machine finished, light and heavy weight wrappings, in white and colors and other specialties. The McDowell Mills began the production of glassines last Spring and have developed a considerable business in these specialties.

News Items of Trade Interest

E. E. Ketcham, who formerly represented the Arrowhead Mills in this territory, is now looking after the interests of the Albermarle Paper Manufacturing Company, 280 Broadway, New York. He will cover the same field formerly traveled as local salesman for the Arrowhead Mills.

S. C. Davidge & Co., of Toronto, Canada, is offering in the Philadelphia trade a very high grade imported Japanese tissue. The tissues made of rice pulp is being freely introduced here by the Canadian importer and those dealers who have been shown the stock claim it to be the best that has ever been shown in these markets, at the prices quoted.

J. C. McLaughlin, for many years connected with the Midvale Steel Company in an executive capacity and of recent years associated with the mechanical department of the Moore and White Company, paper machinery manufacturers, died suddenly while waiting on the platform for his train at Wayne Junction last Tuesday. Surviving are his wife and two daughters.

The Columbian Calendar for 1925

In accordance with the usual practice of issuing a beautiful marine calendar each year, the Columbian Rope Company is now sending out its calendar for 1925.

This calendar, as per the usual Columbian custom features a fine square-rigged ship of the clipper design. The original painting from which the reproduction was made is by Charles R. Patterson, one of the foremost marine painters of the present day.

The calendar measures 16½ inches wide x 33 inches long and has a large date pad showing three months at a glance.

All persons who are on the mailing list of "The Columbian Crew" a publication issued monthly by the Columbian Rope Company, will receive a copy of this Calendar before January 1, 1925 but all persons who buy, sell or use Cordage may procure a copy of this Calendar by writing direct to the Advertising Department of the Columbian Rope Company at Auburn, N. Y. These calendars will be sent out until the supply is exhausted.

Improved Methods and Machinery Offset High Labor Cost!

The Beloit Removable Fourdrinier Gives Added Hours of Production!

Changing a Wire in an Hour or Less
Is a Common Occurrence

Beloit Iron Works **Beloit, Wis., U.S.A.**

Established Since 1858

Editorial

Vol. LXXIX New York, December 11, 1924 No. 24
HENRY J. BERGER, Editor

GOVERNMENT PAPER SPECIFICATIONS

The annual report of the Committee on Paper Specifications, which was submitted on Wednesday of this week to the Joint Congressional Committee on Printing in connecton with the purchase of more than 41,000,000 pounds of various kinds of paper for the use of the Government Printing Office at Washington during the fiscal year beginning March 1, 1924 is of more than usual interest this year. Although the Committee gave notice that it would hold sessions on Tuesdays and Fridays for some time previous to issuing its report in order to receve comments and suggestons from paper manufacturers concerning the paper specifications few manufacturers availed themselves of this opportunity to appear or to make suggestions by letter.

When the proposal and specifications had been tentatively prepared, however, copies were distributed to more than 400 paper makers and dealers, accompanied by a letter from the Secretary of the Committee requesting criticisms and suggestions. Many replies were received, some of which suggested a number of changes, while others stated the proposed specifications were satisfactory for their grades of paper.

"The Committee" the report continues "has given careful consideration to all suggestions and criticisms that have come directly or indirectly to its attention. Where it has been deemed practicable, the suggestions have been accepted and suitable modifications made.

"The specifications submitted have been changed materially in certain respects from those of last year. These changes are regarded as necessary in order to furnish maximum information to bidders, to have the specifications comply as nearly as practicable with commercial practice and to insure paper of suitable quality for the use of the Government.

"The form of specifications has been modified and made more complete by stating each weight, and the respective requirements for bursting strength, folding endurance, or thickness.

"Heretofore the schedule has distinguished between 'air' and 'loft' dried paper on certain bond and ledger papers, and required these papers to be 'loft-dried' which was defined as 'pole-dried in sheets.' These specifications provide that all tub-sized papers shall be air-dried in accordance with the definition 'that the term as used in these specifications shall be construed to mean that the paper, after passing through the sizing tub, shall be dried without contact with internally heated driers and not under applied tension.' Under this definition the paper may be 'air,' 'loft,' or 'pole' dried, as the contractor may elect. It is believed that in making this change the interests of the Government are fully protected as to quality by the other requirements of the specifications.

"The folding endurance test was added last year to specifications for a few of the bond and writing papers. The results during the year have been so gratifying that this test has been added to the requirements for all bond, ledger, map, and sulphite writing papers. It is very important that prospective bidders should give most careful consideration to this requirement.

"Ash has been increased in certain lots of printing papers with a view to enabling manufacturers to improve the opacity of the paper. A new lot has been added under printing papers for 'Machine-finish Book End Paper.' 'Mimeograph' and 'Rag Mimeograph' papers have been made separate lots from the similar quality printing papers under which they were carried last year.

"Since the quality and kind of paper now being secured under the specifications for 50 per cent rag writing are similar to commercial 30 to 40 per cent rag bond papers this grade of writing paper has been eliminated and a 30 per cent rag bond paper added with the same requirements as to strength and folding endurance.

"Several new grades of bond, map and legder papers have been added. The specifications provide for three grades of map paper—chemical wood map, 50 per cent rag map, and 75 per cent rag map; five grades of bond paper—sulphite bond, 30 per cent rag bond (formerly 50 per cent rag writing), 50 per cent rag bond, 75 per cent rag bond, and 100 per cent rag bond; four grades of legder paper—sulphite ledger, 50 per cent rag ledger, 75 per cent rag ledger, and 100 per cent rag ledger.

"All substance 7, 8, and 9 thin bond papers have been grouped as 'Manifold paper,' in which are provided sulphite manifold, 50 per cent rag manifold, 100 per cent rag manifold, and onionskin.

"A sulphite machine-finish cover paper has been added, and under index bristols four commercial weights are provided.

"The specifications for railroad board and pressboard have been changed from ream weight basis to ply and thickness basis, *quotations* to be per thousand sheets instead of per pound.

"Specifications for a chemical wood blotting paper have been added, and the rag content of the 50 per cent rag blotting has been reduced to 25 per cent.

"All specifications in this schedule are based on the existing 500 sheet ream basis; 25 x 38 inches for book papers; 17 x 22 inches for bonds, ledgers, writings, and maps; 24 x 36 inches for wrappings; and 22½ x 28½ inches and 22 x 28 inches for bristols and cardboards. The Committee has given consideration to the recommended ream standarization of all kinds of paper on the basis of 25 x 40 inches, 1,000 sheets, and favors this basis when it is in commercial use.

"The attention of the Committee is invited to the fact that the Public Printer has offered to test for prospective bidders samples of regular stock papers for comparison with these specifications.

"The Government Printing Office has furnished much useful information as to the quality of paper necessary for the use of the Government service and the quality of paper delivered, which, together with much investigational data on commercial bond and ledger papers secured during the past year, has been of material aid to the Committee in preparing the specifications submitted herewith.

"This schedule embraces 178 lots as against 152 lots for last year, and the quantity estimated for the full year is approximately 41,000,000 pounds."

PAPER MILL EMPLOYMENT AND WAGES

The improvement in business that is reported in business generally throughout the country is reflected in the statistics of employment and wages just reported for the paper industry for October by the Bureau of Labor Statistics of the Department of Labor at Washington, D. C.

Two hundred and seven paper and pulp mills reported their employment in September at 52,841, increasing in October to 53,497, an increase of 1.2 per cent. The payrolls in these plants also increased from $1,352,397 in September to $1,412,354 in October, an increase of 4.4 per cent.

Replies were also received from 151 paper box factories which gave their employment in September at 16,504, increasing in October to 17,158, an increase of 4 per cent. The payrolls in these plants also increased from 348,697 in September to 362,548 in October, an increase of 4 per cent.

The Bureau also received replies from 141 paper and pulp mills which gave their employment in October of last year at 43,559, decreasing in the same month of this year to 43,391, a decrease of 0.4 per cent. The payrolls in these plants also decreased from $1,151,994 in October of last year to $1,144,644 in October of this year, a decrease of 0.6 per cent.

One hundred and thirty-seven paper and box factories gave their employment in October of last year at 13,070 decreasing in the same month of this year 14,681 a decrease of 2.6 per cent. The payrolls in these plants also decreased from $303,935 in October of last year to $306,496 in the same month of this year a decrease of 0.8 per cent.

Paper Committee to Meet Sec. Hoover

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., Dec. 10.—The Advisory Committee from the Paper Industry for the Department of Commerce will come to Washington, December 18 and 19 to confer with Secretary of Commerce Hoover, paper officials of the Department and officials of the Bureau of Standards, according to an announcement just made.

The Committee will confer with Secretary Hoover, Doctor Julius Klein, chief of the Bureau of Foreign and Domestic Commerce, John Matthews, Jr., chief of the Paper Division of the Department, Dr. Burgess, Director of the Bureau of Standards, and other departmental officials. The so-called Hoover committee will spend December 18 at the Department of Commerce while on the 19th conferences will be held at the Bureau of Standards. On December 18th a luncheon will be held at the Cosmos Club at which time it is expected that Secretary Hoover will address the paper manufacturers.

The Advisory Committee, most of whom are expected to attend the conference, follow:

Geo. W. Sisson, Jr., Chairman, Racquette River Paper Company, Potsdam, N. Y.; Wm. F. Brunner, Paterson Parchment Paper Company, Passaic, N. J.; C. R. McMillen, Union Bag and Paper Corporation, Woolworth Building, New York; Norman W. Wilson, Hammermill Paper Company, Erie, Pa.; James Logan, U. S. Envelope Company, Springfield, Mass.; Geo. W. Nelson, West Virginia Pulp and Paper Company, 200 Fifth avenue, New York; H. Frank McElwain, Crocker-McElwain Company, Holyoke, Mass.; A. H. Nevius, Miami Paper Company, West Carrollton, Ohio; L. M. Alexander, Nekoosa-Edwards Paper Company, Pt. Edwards, Wis.; Felix Pagenstecher, Bryant Paper Company, Kalamazoo, Mich.; S. B. Copeland, Eastern Manufacturing Company, Bangor, Maine; Frank E. Taylor, Taylor-Logan Company, Papermakers, Holyoke, Mass.; H. W. Ellerson, Albemarle Paper Manufacturing Company, Richmond, Va.; W. L. Carter, Nashua Gummed and Coated Paper Company, Nashua, N. H.; E. H. Burton, A. P. W. Paper Company, Albany, N. Y.; J. P. Hummel, Hummel-Ross Fibre Corporation, Hopewell, Va.; Peter C. Brashear, Fort Orange Paper Company, Castleton, N. Y.; Guy Waldo, Flambeau Paper Company, Park Falls, Wis.; J. V. Baron, St. Regis Paper Company, Watertown, N. Y.; A. D. Coffin, C. H. Dexter & Sons, Windsor Locks, Conn.; Frank L. Stevens, Stevens & Thompson Paper Company, North Hoosick, N. Y.; G. Frank Merriam, Holyoke Card and Paper Company, Springfield, Mass.; L. H. Davey, The Davey Company, 164 Laidlaw avenue, Jersey City, N. J.; W. R. Lusignea, McLaurin-Jones & Company, 47 McClellan St., Newark, N. J.; Henry W. Stokes, York Haven Paper Company, 906 Land Title Building, Philadelphia, Pa.; Hugh P. Baker, American Paper and Pulp Association, 18 E. 41st street, New York.

To Appeal From Definition of Standard News Print

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., December 10, 1924.—Officials of the Customs Service here will recommend that the Secretary of the Treasury direct an appeal from the recent decision of the United States Board of General Appraisers in connection with the definition of standard news print paper.

The Board put an entirely different construction on the definition that was intended by government officials here, and it is understood that if the Assistant Attorney General in charge of Customs at New York does not suggest an appeal in the decision that it will be brought to the attention of the Secretary of the Treasury.

It is understood here that the government has sixty days in which to file an appeal with the Customs Court of Appeals. In the meantime the Board's decision does not become effective until the end of sixty days and if an appeal is filed during that time the decision does not become effective until the final decision of the Court. Customs officials here seem to be of the opinion that the Board erred in its judgment in the case and they are anxious to know what the court will say.

Want American Writing to Pay Taxes

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., December 9, 1924.—The American Writing Paper Company is being asked by the City of Holyoke to pay its taxes of 1923 and 1924 totalling over $300,000 as the city needs the money. Tax Collector James M. Kennedy with City Solicitor Hugh Lacey visited the State Tax Collector's Office in Boston the past week and also held a conference with the officials of the Old Colony Trust Company. On their return they held a long conference with President Sidney L. Willson of the company.

Tax Collector Kennedy told your correspondent that progress had been made but that there would be no developments for a few days at least. He said that he realized that business was not up to normal in the paper making industry and also that he had nothing drastic in mind. "I think we shall come to equitable understanding without friction," he said.

It is understood that the American Writing Paper Company is in need of working capital and that is the reason why the taxes have not been paid. As the city has first lien on the property there is no fear that there will be any loss on the part of the city.

Fire in Crocker-McElwain Rag House

[FROM OUR REGULAR CORRESPONDENT.]

HOLYOKE, Mass., December 9, 1924.—Fire was discovered in the stock warehouse of the Crocker-McElwain Company, Friday morning about 9 o'clock and an alarm brought the fire department which had a couple of hours work in locating and subduing a rather stubborn blaze. The fire was in some bales of rags and was difficult to locate. Considerable water was poured on and some of it ran down onto the floors below and threatened to do injury to the electric motors. These were quickly covered with drier blankets and an hour or so after the fire was out they were started up without trouble. The loss from fire and water will be about $1,000.

SYMBOL of QUALITY
KALBFLEISCH
CHEMICALS
FOR NEARLY A CENTURY

Chemicals for Paper Mills

CASEIN

IMPORTED • DOMESTIC

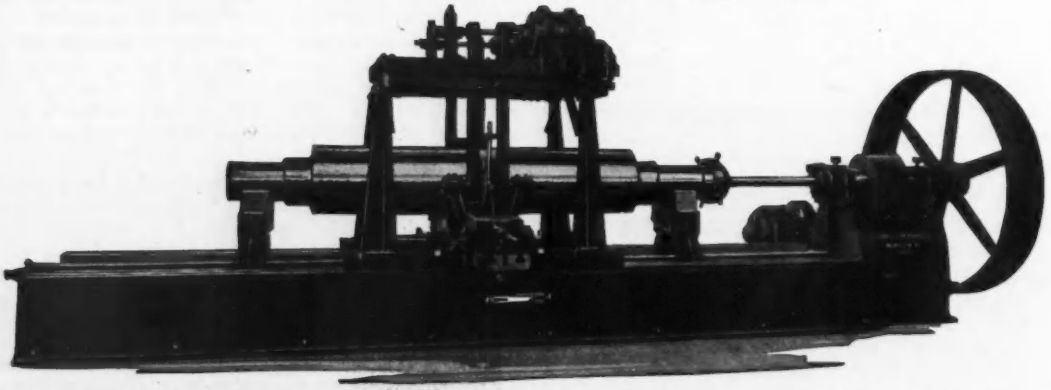
ALL
Grades - Grindings
MAXIMUM
Strength Solubility Cleanliness

THE KALBFLEISCH CORPORATION

200 FIFTH AVENUE, NEW YORK, N. Y.

FACTORIES—Erie, Pa. Kalamazoo, Mich. Chattanooga, Tenn. Waterbury, Conn. Elizabeth, N. J. Brooklyn, N. Y.

LOBDELL **ROLL GRINDERS** are the only machines of the kind fitted with automatic crowning device which develops a perfect crown without the use of a guide or former and repeated trying for the correct setting.



LOBDELL Calenders are equipped with Patent Electric Motor, Hydraulic or Ratchet Lift all operated from the floor.

LOBDELL Micrometer Calipers are handy and accurate.

LOBDELL CAR WHEEL CO. Est. 1836 **Wilmington, Del. U. S. A.**

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

DETERMINATION OF HYDROGEN

Produced in a General Electric, Electric Steam Generator

By C. Dantsizen, Research Laboratory; E. H. Horstkotte, Industrial Engr. Dept., General Electric Co.

In order to determine the amount of hydrogen liberated in an electric steam generator under actual operating conditions, a test was made on a unit rated 5,000 kilowatt, 3 phase, 60 cycle, 6,600 volts, operating at 100 lb. gauge, installed at the plant of the Union Bag and Paper Corporation, Hudson Falls, N. Y.

Apparatus Used in Test

The apparatus used in conducting this test was arranged as shown in the next page photograph. It consisted of a condenser which was connected to the main steam line by a ¼-inch pipe. Cooling water was supplied to the condenser and the condensate was caught and measured in a graduated container. The gas was caught in an inverted glass graduate which served as a gasometer. Before the test was started, the inverted graduate was so filled with boiled water that whatever gas was trapped at atmosphere pressure was equal in volume to the amount of water displaced. In order to make sure that no condensate from the main steam line drained back into the testing apparatus, the ½-inch steam pipe to the condenser was connected to the upper side of the steam line. It is a reasonable assumption that there is a homogenous mixture of steam hydrogen and other gases at this point. Only a portion of the steam flowing in the ½-inch line was condensed, the remainder exhausting to atmosphere. In this way only dry steam was taken into the condenser.

First Test at Normal Operating Pressure

The first test was started at the time the generator came to normal operating pressure. During a period of 62 minutes, 790 cc. of gas was liberated from 5.010 cc. of condensate. During this run the average power input into the generator was 1,450 kilowatt, 3 phase, 60 cycles, 7,000 volts, 120 amperes.

The gas analysis was: Hydrogen, 1.3 per cent; oxygen, 18 per cent. The 790 cc. of gas, or 5,010 cc. of condensate, contained 790 × 1.3 per cent = 10.27 cc. of hydrogen. Or, for each cubic foot (62½ lb.) of water evaporated, 0.00205 cubic ft. of hydrogen was liberated.

During the tests the temperature of the feed water was 180° F., and the pressure at which the generator operated was 100 lb. gauge. With these conditions the total heat added per pound of water evaporated, from the steam tables, is 1010.7 B. t. u. Assuming that the generator operates at 97 per cent efficiency, then the number B. t. u. used per hour in evaporating water is 1,450 × 3,412 × .97 = 4,780,000 B. t. u.

$$\frac{4{,}780{,}000}{1010.7} = 4{,}730 \text{ lb. water evaporated per hour with an average power input of 1,450 kilowatt.}$$

$$\frac{4730}{62.5} = 76.5 \text{ cu. ft. of water evaporated 1 hr.}$$

$76.5 \times 0.00205 = 0.157$ cu. ft. of hydrogen liberated per hour when the generator was first started with a power input of 1,450 kilowatt, 7,000 volts, 120 amps., 3 phase, 60 cycle. This is equivalent to 0.00131 cu. ft. of hydrogen generated per amp. per hour.

Curve No. 1

From curve No. 1 it is seen that the rate of liberation of gas gradually decreases. This is to be expected, as there is a considerable volume of air in the generator shell and feed water which passes out with the steam during the first hour or so of operation.

After the steam generator had been in operation several hours another test was made. During a period of two hours and 43 minutes, 407 c.c. of gas was liberated from 21,993 c.c. of condensate. During this run the average power input was 1,310 kilowatt = 7,000 volts, 108 amp., 3 phase, 60 cycle.

The gas analysis was: Hydrogen, 4.4 per cent; oxygen, 20.5 per cent. The 407 c.c. of gas, or 21,993 c.c. of condensate contained 17.908 c.c. of hydrogen. Or for each cubic foot (62½ lb.) of water evaporated, .000815 cu. ft. of hydrogen was liberated.

Calculating the number of cubic feet of water evaporated per hour as before:

$$\frac{1{,}310 \times 3{,}412 \times .97}{1010.7 \times 62.5} = 69.8 \text{ cu. ft. of water evaporated per hour.}$$

$69.8 \times .000815 = 0.05688$ cu. ft. of hydrogen liberated per hour when the generator was operating with a power input of 1,310 kilowatt, 7,000 volts, 108 amperes, 3 phase, 60 cycles, and after the generator had been operating long enough to eliminate the effect of the air trapped in the generator while cold. This is the equivalent to 0.000527 cu. ft. per ampere per hour.

Curve No. 2

Curve No. 2 indicates that the rate of evolution of the gaseous mixture is constant as long as conditions in the generator are constant. At the point 275-63, the feed water regulator operated ad-

mitting more water into the lower compartment. The rate of evolution of gas increased due to the presence of air in the added feed water. As soon as this air was removed from the generator the rate of evolution of gas was the same as before as indicated by the slope of the curve.

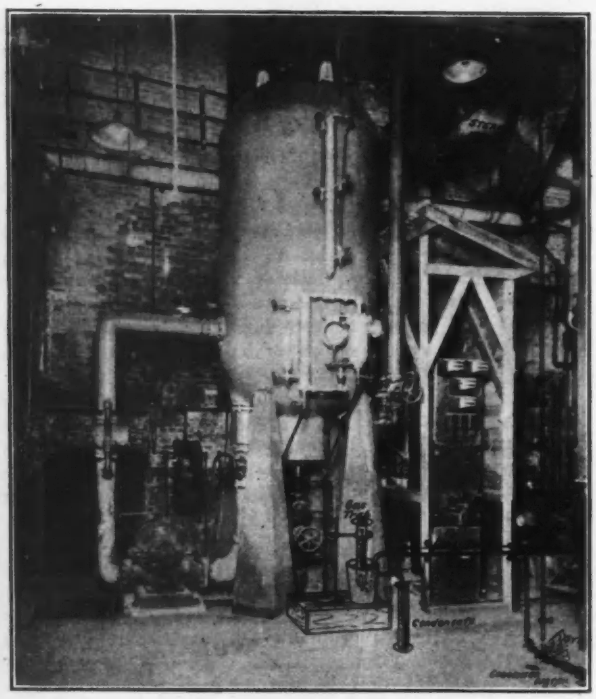
Comparison of the Two Tests

By comparison of the two tests it is seen that the evolution of gas (air and hydrogen) is greater when the generator is first started, and it is also seen that the evolution of hydrogen is greater when the generator is first put into operation than it is after running several hours. After conditions become constant, the rate of generation is constant for a constant current input.

It should be noted that in either case the quantity of hydrogen liberated per hour is exceedingly low, and if the generator supplies steam to a circuit in which all condensate returns to an open hot well, it is impossible to accumulate sufficient hydrogen within the generator shell to form an explosive mixture of any magnitude. If the steam generator were operating on a closed system, however, evaporating the water over and over again, and no means were provided for the removal of the hydrogen generated, then a considerable accumulation of hydrogen would take place in the generator shell, which might be ignited by an arc drawn from the electrodes and exploded.

To Determine Hazard

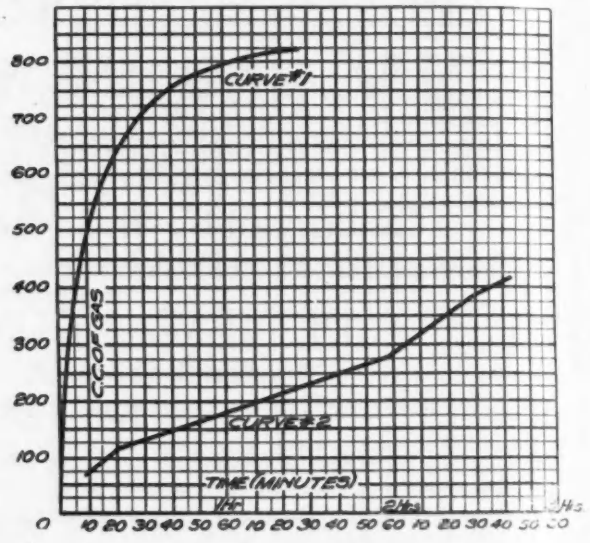
In order to determine if there was any greater hazard in operating a heating system with steam generated by an electric steam generator compared with steam from a fuel fired boiler, an analysis was made of the steam made in the boiler plant of the Schenectady



Apparatus Used

Works of the General Electric Company. Using the same apparatus, 160 cc. of gas was trapped out of 50,000 cc. of condensate. This gas analyzed 10 per cent hydrogen, which is formed by the action of steam in contact with iron. This is at rate of 0.0003 cu. ft. of hydrogen for each cubic foot of water evaporated.

The generator of hydrogen in an electric steam boiler will be approximately proportional to the amperes input, but whatever the current input, the same volume of hydrogen might accumulate in a heating system if it were supplied with steam from a fuel fired boiler, it being merely a question of time. However, since no destruction of heating systems has been attributed to hydrogen from



Curves No. 1 and 2

fuel fired boilers, then it is reasonably safe to assume that the same performance might be expected with steam from an electric steam generator.

Hill Clutch Installations in Paper Mills

Year after year the use of Hill Clutch mill equipment increases in the pulp and paper industry throughout the United States and Canada.

Some of the notable installations in 1924 are as follows: North Star Strawboard Mills, Ontonagon Fibre Company, Lowe Paper Company, Missisquoi Pulp and Paper Company, Champion Coated Paper Company, Eddy Paper Corporation, Adams Paper Company, International Paper Company, Bogalusa Paper Company, Hammermill Paper Company, Riordon Pulp Corporation, Crown-Willamette Paper Company, Howard Paper Company, Hanna Paper Company, Dunn Sulphite Paper Company, A. P. W. Paper Company, Ohio Wax Paper Company, Nashua River Paper Company, Degrasse Paper Company and Paper Converting Corporation.

Where new plants were put in operation either the power transmission equipment or the agitator equipment, or both, was supplied. To others were furnished Smith Type Hill friction clutches, Industrial Type spur gear speed transformers, Cleveland Type collar oiling bearings or general line shaft equipment.

All of the material built by The Hill Clutch Machine and Foundry Company, Cleveland, Ohio, is of sturdy design, mechanically correct, efficient and durable. The Cleveland Type Collar oiling bearing is generally recognized as the highest type of self oiling bearing. Smith Type Hill friction clutches are also liked because of their rugged construction and ability to stand up under severe load conditions. The Industrial Type spur gear speed transformer (patent applied for), although on the market but two years has created a wide interest in paper mill circles. It was designed primarily to fill the urgent market need for an efficient and durable speed changing device; in other words, something very substantial to meet the every day rough usage of paper mill operation.

WASTE HEAT IN PULP AND PAPER MILLS*

DR. VON LASSBERG

There are three divisions into which the utilization of heat in the pulp and paper mill may be classified.

(1). First there is the heat furnished at a temperature of 300° to 400° C. In this case only the heat in the steam for operating power producing apparatus is included.

(2). Then there is the heat that is furnished at a temperature of 130° to 220° C. In this case the heat is also found in the steam, and we are concerned with that in the exhaust from the power producers, which is employed for heating and digestion purposes.

(3). Finally we have the heat released between a temperature of 100° C and one of 50° C. In this case we are concerned with the heat from the two above mentioned stages, which has been employed for drying and digestion and which in the manufacturing processes is carried away into the form of vapors, gases, air, waste liquors, and the like. This is the heat that at the present time goes to waste very largely. This may therefore be called the waste heat from the manufacture.

Utilization of Heat in the Plant

It is evident that heat is employed in the pulp and paper mill under three different sets of conditions, as indicated, depending on the temperature differentials. The heat consumed in the first stage is naturally used with the least amount of difficulty; this applies to the second stage as well. The way in which this heat is employed is well known and needs no description here. But the utilization of the heat of the third category is a more difficult matter and in fact is not practiced largely at all. Nevertheless, there is a considerable amount of heat involved in the third stage and its use is the essential subject of this article. In this paper as far as it is possible all figures have been based on 1 kilogram of absolutely dry pulp.

Nature of the Waste Heat

By waste heat is meant the heat contained in the mixtures of air and steam, from the drying part of the pulp and paper machines, the heat from the relief of the digesters, that found in the waste gases from the digesters and cookers and in the waste liquors, the heat in the different condensates, in the gases from the pyrites roasting furnaces and finally that which goes to waste in the flue gases from the boilers.

The first thing that must be considered is the nature and the amount of this heat, then the use to which it has been put up to the present time and finally the more extended use which can be made of it.

Heat in the Vapors from Drying Operations

The vapors from the drying apparatus are a mixture of air and water vapor. These vapors are derived from the drying parts of pulp and paper machines and contain the entire amount of water evaporated from the pulp and paper webs. Hence it is evident that the amount of heat entrained in this manner is rather considerable.

If a_1 is the percentage of dry matter in the stock before it reaches the drying part of the machine, and a_2 is the percentage of dry matter after the web has been dried, then the amount of water to be evaporated per kilogram or dry pulp will be $\left(\frac{100}{a_1} - \frac{100}{a_2}\right)$ kg. Then the heat of vaporization contained in the waste vapors from the drying apparatus will be equal to the following formula in which r is the corresponding latent heat of vaporization of water: $\left(\frac{100}{a_1} - \frac{100}{a_2}\right) r$ kilogram calories.

*Papierfabrikant, 1924, 461-472.

(All heat quantities will be expressed in kilogram calories.)

Figure 1 shows the curves for two different dry limits. From it there can be obtained the amount of water that has to be evaporated in the drying apparatus to obtain dry webs containing different percentages of dry material.

Sample of Calculation

The following example shows just how the curve sheet is employed. It is assumed that in a pulp drying apparatus the factor a_1 is 40 per cent absolute dry weight, a_2 is 88 per cent. Then the quantity of water vapor that is removed per kilogram of pulp is obtained from the following equation: $\frac{100}{40} - \frac{100}{88}$ or 1.36 kilograms of water per kilogram of pulp. The heat required to remove

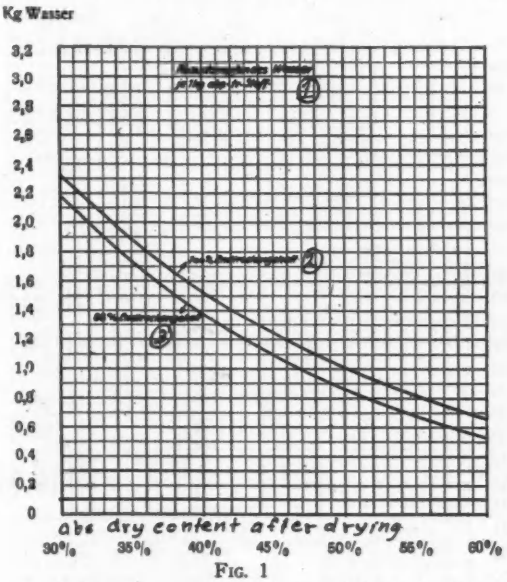


FIG. 1

1. Water to be evaporated per kilogram absolutely dry stuff.
2. 100% final dry content.
3. 88% final dry content.

this amount of moisture is then 840 kilogram calories per kilogram of pulp. This is the heat that will be found in the vapors that issue from the drying machine.

However, it is necessary to make a strict differentiation at this point between the following considerations, namely, the manner in which the operations are carried out at the present time and the method that can be used for the utilization of this heat which is the correct one. The fundamental basis of the present operating system is that the machine should be large enough and the quantity of heated air fed to it sufficient to remove all the moisture that is in the pulp and carry it away. In order to increase the capacity of the air for moisture, fresh air is used to which considerable quantities of heat have been added. The quantity of air and the quantity of heat that is required to raise its temperature to the required point can be calculated from physical data, and from the fact that the absorptive capacity of the air for moisture increases very markedly as the temperature of the air rises.

The Saturation Curve

Figure 2 is the saturation curve, and gives the quantities of water vapor in grams which can be contained as a maximum in 1 kilogram of moist air at different temperatures. The air in this case

is considered to be completely saturated with moisture. If the air does not contain this maximum content of water vapor, and the latter amount is the normal percentage of moisture in the air, then the air is considered to be relatively saturated, and the ratio of this figure to the complete saturation figure is known as the "relative humidity," also as the degree of saturation.

Inasmuch as these considerations are somewhat complicated, in order to obtain a better understanding of them the following general and numerical example is given.

In this calculation the problem to be solved is the number of grams of water that can be absorbed and held by one kilogram of dry fresh air with a certain definite humidity and there must also be established how much this capacity for holding moisture is increased by raising the temperature of the air. The difference between the two is the absorptive capacity of one kilogram of air.

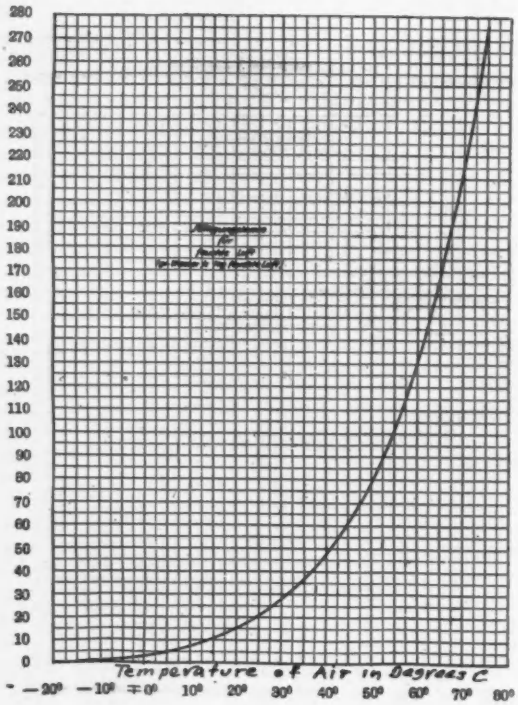


FIG. 2

Saturation Curve for Moist Air (grams water per kilogram moist air).

From this there can then be found the quantity of air that is required to absorb 1 kilogram of moisture and from that the amount of heat necessary to warm up the air to the proper temperature.

Details of the Problem

If then the maximum amount of water that can be absorbed by the moist air at any given temperature is taken to be b, which can be found from the saturation curve, and if the relative humidity of the air is taken to be p, then one kilogram of the moist air will contain bp grams of water vapor.

One kilogram of dry air will hold $\frac{1000\ bp}{1000 - bp}$ grams of water vapor. When complete saturation takes place the humidity of the air becomes equal to unity.

If in this special case under consideration fresh air is available with b_1p_1, and at a temperature t_1, which is heated and brought to the higher temperature t_2 with b_2p_2, then 1 kilogram of the dry air will absorb the following amount of water vapor:

$$\frac{1000\ b_2p_2}{1000 - b_2p_2} - \frac{1000\ b_1p_1}{1000 - b_1p_1} \text{ grams.}$$

Hence, in order to absorb 1 kilogram of water vapor there will be required the following amount of dry air:

$$1000 : \left(\frac{1000\ b_2p_2}{1000 - b_2p_2} - \frac{1000\ b_1p_1}{1000 - b_1p_1} \right) \text{kilograms.}$$

The heat required to raise the temperature of the air from the initial temperature t_1 to the final temperature t_2 is given by the following formula in kilogram calories:

$$\left[1000 : \left(\frac{1000\ b_2p_2}{1000 - b_2p_2} - \frac{1000\ b_1p_1}{1000 - b_1p_1} \right) \right] (t_2 - t_1)\ cp \text{ Kilogram Calories.}$$

In all these calculations it is most advisable to conduct the mathematical work on the basis of weight units, thus kilograms of air and of water, and not on the volumetric basis, as when this is done the temperature and the pressure must be taken into consideration which further complicates the calculations. It is also advisable in all practical applications of these calculations to base the weight and the heat content of the moist air and water vapor mixture, which comes from the drying cylinders, in admixture with one kilogram of dry air. If it is necessary to reduce the figures to volumetric terms, this can easily be done with the aid of specific gravity tables.

Numerical Application of the Formula

When a numerical application is made of the formulas, it is seen that they become much simpler in form. In this case it is assumed that a pulp dehydrating machine is being considered. The factor a_1 is 40 per cent absolute, a_2 is 88 per cent absolute. Hence the amount of water to be evaporated per kilogram of pulp is 1.36 kilograms. The temperature of the fresh air is 10° C, the relative humidity 60 per cent, the temperature of the air leaving the dryer 50° C and the relative humidity of this air 80 per cent.

The following may be obtained from Figure 2, namely, the maximum water content in the fresh air, which is 7.5 grams, and that in the exhaust air which is 79 grams. Then the following substitutions in the above formulas may be made:

$\frac{7.5 \times 0.6 \times 1000}{1000 - 7.5 \times 0.6}$ which gives 4.52 grams of water. This is the amount of water that will be absorbed by 1 kilogram of air at 10° C and 60 per cent humidity.

Then 1 kilogram of air at 50° C and 80 per cent humidity will absorb the following quantity of water:

$$\frac{79 \times 0.8 \times 1000}{1000 - 79. \times 0.8} \text{ or } 67.20 \text{ grams of water.}$$

The capacity of the air for absorbing moisture is therefore raised 62.7 grams by raising the temperature of the air from 10° to 50° C. In order to absorb 1 kilogram of water there will be required the following amount of dry air, viz., $\frac{1000}{62.7}$ or 16 kilograms of dry air.

Then in order to heat this air from 10° C to 50° C there will be required the following number of kilogram calories: (In this calculation the small amount of heat that is contained in the fresh air at the temperature 10° C is neglected in order not to further complicate the calculations)

$16 \times (50 - 10) \times 0.24$ or 154 kilogram calories.

The last two values, when calculated on the basis of 1 kilogram of absolutely dry pulp with the stated content of dry substance,

give 21.8 kilograms of dry air and 210 kilogram calories per kilogram of pulp.

The 16 kilograms of dry air has a volume of 12.4 cubic meters at 10° C, and at 50° C the volume will increase to 14.7 cubic meters. By the absorption of 1 kilogram of water vapor at 50° C. with a volume of 12 cubic meters, the volume of the mixture of air and water vapor will be increased to 26 cubic meters. This is the volume of waste hot gases that comes from the drying cylinders.

It is of course obvious that these figures will change according to the contents of dry matter in the paper web or pulp before or after

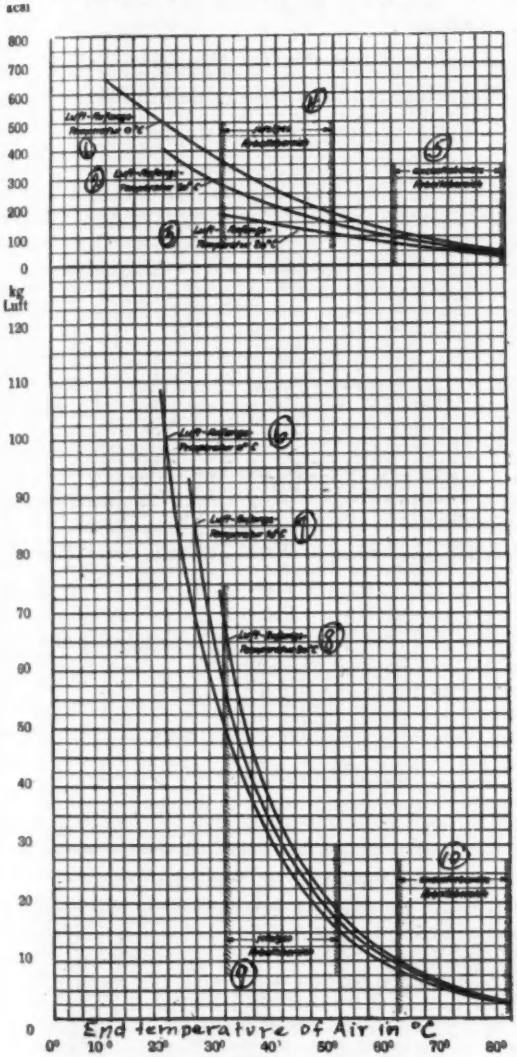


FIG. 3

1. Air—initial temperature 0°C.
2. Air—initial temperature 10° C.
3. Air—initial temperature 20°C.
4. Present working range.
5. Working range striven for.
6. Air—initial temperature 0°C.
7. Air—initial temperature 10° C.
8. Air—initial temperature 20° C.
9. Present working range.
10. Working range striven for.

the drying section of the apparatus, even when the air conditions remain the same.

Variation of Air and Heat Required with Temperature

The curve in Figure 3 shows the way in which the quantity of air required for the drying operation and the amount of heat that must be added to it vary with the initial and end temperatures. The considerable increase in the amount of air required as the final temperature decreases is noteworthy. The quantity of heat changes to a slight degree only, as the small increases in the temperature are able to counterbalance large increases in the weight of the air.

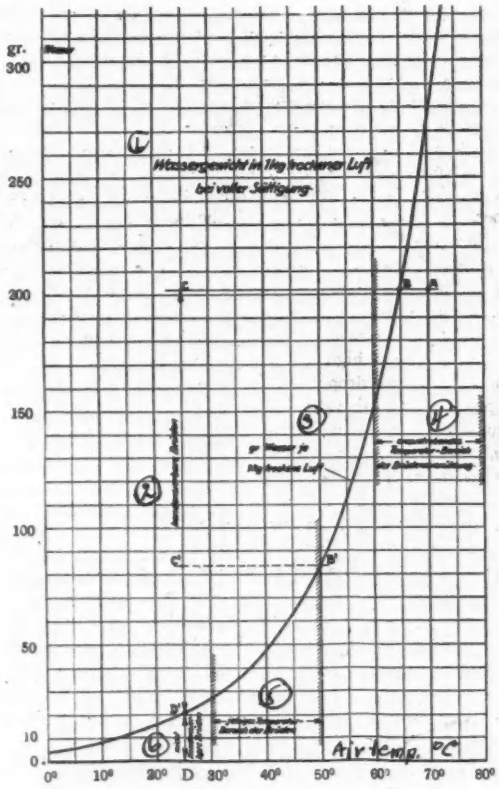


FIG. 4

1. Weight of water in 1 kg. dry air at complete saturation.
2. Condensable vapors.
3. Grams water per kg. dry air.
4. Temperature range striven for in utilization of vapors.
5. Present temperature range of vapors.
6. Non-condensable vapors.

In the following tabulation is given the amount of waste heat from the drying part of a pulp dehydrating machine compared with the heat figures which have been calculated above.

Heat obtained from the drying machine and contained in the following	Per cent	Kilogram calories	Remarks
Water vapor	63.9	840	At A_1 equal to 40%. A_2 equal to 88%.
Dry air	16	210	At 10° C. initial temperature and 50° C. temperature and 60 or 80% relative humidity.
Pulp	3.4	45	
Hot vapor condensate	16.7	220	At 2.2 kg. of steam, 3 atmos. pressure per kg. of absolutely dry pulp.
	100	1315	

The heat that is contained in the pulp itself is very small and cannot be put to any useful purpose. On the other hand the heat in the condensate is utilized practically everywhere. The quantity of heat used for heating up the air is considerable. In spite of this fact the heat in the waste air and vapors from the drying apparatus and the possibility of putting it to useful purpose have received but little attention up to the present time. It may be true that its significance was not understood clearly.

The Heat in the Waste Gases

The principal part of the waste heat from the drying part of paper and pulp machines is found to the extent of 64 per cent in the water vapor in the waste gases, and the idea immediately suggests itself that it is possible to utilize this heat for heating up fresh air. In accordance with the general methods in vogue at the present time the utilization of this heat appears to be a rather difficult matter. The reason for this is that the temperature of these waste gases is only about 50 degrees C and in fact less under certain conditions and the vapor is also mixed with a great excess of air. But just as soon as the problem is concerned with the recovery of the latent heat of vaporization contained in the water vapor, then an entirely different method of working is available.

In the present day process, where the water vapor requires a medium, wherewith it may be absorbed and carried along, in order to avoid condensation in the room where the drying is carried out, it has been necessary to mix air with the vapor and to heat the air before admixture to the proper temperature. If it is desired to recover the waste heat from the driers, then it is necessary to work on entirely different lines and to consider the possibility of using as little air as possible so as to have as little as possible mixed with the water vapor. In this way it is necessary to maintain the dew point of the air as at high a point as possible, which means a considerable temperature drop in the heat exchange apparatus. In the second place the air disturbs all the condensation processes in this apparatus and in the third place the higher the dew point, the more of the mixed steam and air can be utilized, so that the residual uncondensable gases in the mixture are small. At the same time as much as possible of the heat is saved, which according to modern methods, may be used for heating up the air.

In Figure 3 it has been shown how the method of operating differs from the ordinary. Figure 4 gives us a good idea of injurious effect of the admixture of air. For example, if the original condition of the mixed air and steam is indicated by the point A by the determination of the air temperature and the establishment of the dew point, then the degree of cooling required, in order to attain the dew point, is represented by the line AB. From this point on, if further cooling is carried out, condensation ensues. Line CD is the entire amount of water contained in 1 kilogram of the air; on cooling down to 25 degrees C *CD'* is the condensable part and *DD'* is the uncondensable fraction of the air-steam mixture. The ratio *CD'* to *CD* represents the degree to which the heat in this waste steam can be utilized.

Figure 4 also shows that when the dew point curve is flat there

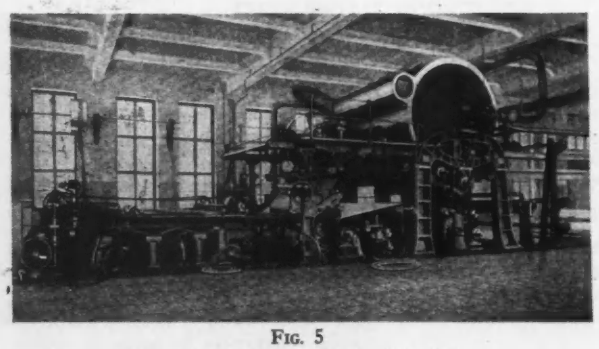


FIG. 5
Füllerer Single Cylinder Machine With Casing.

is no particular advantage to be gained within the realm of lower temperatures, when the waste gases from the driers are cooled down too far. If the quantity of air mixed with these gases is larger, then the point B is pushed down along the saturation curve, for example to the point B', and the ratio of the gases that can be put to useful purpose C'D' to the total quantity of these gases, represented by the distance C'D, becomes immediately less favorable, quite apart from the fact that the temperature fall in the heat exchanging apparatus becomes much less, and the process of condensation is rendered particularly difficult by the presence of the air in the waste gases. Furthermore the greater quantity of air mixed with the waste gases from the driers must be heated up to the required temperatures, which implies a further loss of heat. (In all this work the humidity of the air is determined by means of the usual wet and dry bulb thermometer, which is too familiar to technical men to require explanation here. With the aid of the tables and formulas that accompany this instrument it is possible to determine the exact quantity of moisture contained in the air, as

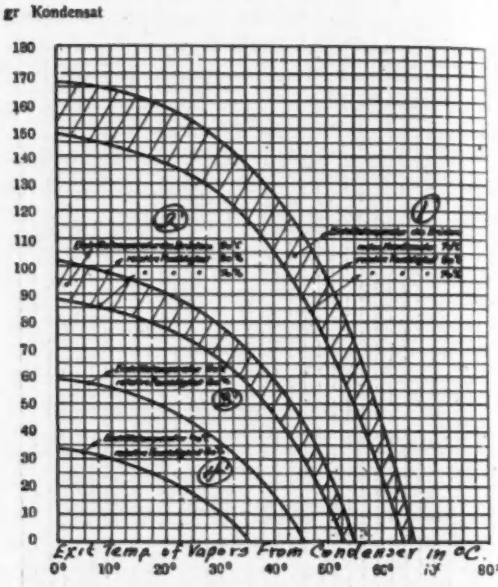


FIG. 6
Quantity of Condensate from Waste Vapors in Grams Per Kg. Dry Air.
1. Initial temperature of vapors in condenser 70° C.
   Relative humidity 80%.
   Relative humidity 70%.
2. Initial temperature of vapors 60° C.
   Relative humidity 80%.
   Relative humidity 70%.
3. Initial temperature of vapors 50° C.
   Relative humidity 80%.
4. Initial temperature 40° C.
   Relative humidity 80%.

well as the vapor pressure of the water vapor, and from that the weight of the moisture and the relative humidity of the air).

Practical Application of Principles Described

The principles on which the utilization of the heat contained in the waste gases derived from the driers, as has been described above, namely, that the vapor be mixed with as little air as possible, must now be carried out in practical work. This is by no means an easy matter. In the case of the single drier machine, it is rather an easy matter to enclose the large drying cylinder in a casing and so limit the air to an absolute minimum. The way this can be done is seen from Figure 5, which shows a machine in which the cylinder is entirely enclosed. It was also necessary to install a heat interchanging apparatus in the outlet pipe which goes through the cover of the cylinder, so that the heat in the waste gases can be used to warm up fresh air.

It is a much more difficult matter to do this when there is a series of drying cylinders. In this case the machine must be provided with suction pipe and suction hoods, located at the points where the greatest amount of steam is released. There have been quite a few machines of this type patented, but they have been made with the intent of leading drying air into the hoods and on to the wet paper web.

The use of apparatus for recovering the heat in the waste gases

from the drying part of the machine, apparatus which condenses the steam contained in them are not to be found in the German and Austrian paper mills, but they are being used in the paper mills in Sweden. According to the information given out on this matter, in Sweden it has been possible by the use of these installations to effect a saving of from 25 to 30 per cent in the steam consumption in the drying part of the paper making machine. This must be characterized as possible at any rate.

In the United States success has also been had along these lines and a considerable recovery of heat has been effected and large savings in the fuel cost made by the condensation of the waste gases. The practice has been to heat fresh air used in the drying part of the paper making machine and eventually for room heating as well by passing it through condensers in which the waste steam was being condensed and made to give up its heat of vaporization.

Various Uses of the Recovered Heat

In certain instances the warm air is also employed for drying the drier felts, and this has made it possible to operate without using felt driers. The apparatus must necessarily be large because of the small temperature differential and the large quantities of the mixed steam vapors and air to be treated. The practice has been to provide a hood over the entire drying section of the machine, this hood being made of asbestos tile and hanging low down and as close to the drying cylinders as possible. Two or three vertical tubes of large diameter lead from this hood to the air economizer.

In the use of condensers for the mixed steam and air with corresponding suction installation for the preheating of the air, the entire quantity of heat is saved which is employed by direct heating for warming up the air and through radiation for heating up the bottom of the drying cylinders. In suction installatoins that operate well, which bring the vapor at as high a temperature as possible into the condenser, which means mixed with as little air as possible, large quantities of fresh air may be warmed, not only the amount required for drying the paper web on the machine, but also for room heating, felt drying and other purposes. Efficient suction installations are also advantageous for machine operation in that they increase the productive capacity of the machines. In addition there is obtained a quantity of condensate which corresponds to the quantity of condensed steam. This condensate cannot be used without any further treatment as boiler feed water, for it may contain a certain amount of acid and is also contaminated with other impurities.

Operation of the Condensers

Figure 6 gives a number of curves concerned with the quantity of condensate obtained in the condenser at different exit temperatures. These curves may be developed without any trouble from the information contained in Figure 4. They indicate that the amount of condensate per kilogram of dry air in the mixture which can be obtained by cooling down the mixed steam and air from the certain initial temperature to a certain end temperature when the moisture content—relative humidity, is at a definite point. The points where the curves cut the X axis represent the dew points, at which condensation begins. Thus the more condensate is obtained per kilogram of fresh air in the steam-air mixture from the driers, the higher the temperature and the higher the saturation of the air-steam mixture brought into the condensers, and the lower the temperature to which these mixtures are cooled.

In order to base the condensate figures on 1 kilogram of pulp, it is only necessary to multiply the figures obtained from Figure 6 by the quantities of fresh air required for the drying of 1 kilogram of pulp, which are known or may be calculated from the characteristics of the paper making machine. Against these advantages are to be figured the consumption of power for driving the two fans for moving the fresh air and mixture of waste steam and air from the driers as well as the comprehensive arrangement of tin plate tubes of large diameter which appears today to be unusual, but which must be arranged in proper order. The power consumption of the exhaust fan for the mixture of waste steam and air falls of course with the increase in the temperature of this mixture, as the specific volume of the vapors then decreases sharply and less air is required.

From what has been said it is evident that successful recovery of the heat in the waste steam and vapors from the drying cylinders depends on the admixture of as little air as possible with the former. The limiting case is naturally the admixture of no or practically no air with the steam. In the newly developed vacuum drying installation for paper this condition has been realized. The moisture is removed from the wet paper web under a vacuum and as a result is obtained in the form of pure vapor with no air mixed with it. This vapor is condensed in surface condensers located under the paper making machine. The heat in this vapor can then be easily recovered and put to useful purpose.

It is interesting to note here that the recovery of the waste heat in waste steam is practiced in a large number of industries, as for example in the textile industry, where the condensed steam is used for heating up water, etc. In each case the details of the recovery process must be worked out separately for the individual conditions vary considerably. But the next result has always been a recovery of heat values which more than compensated for the expense involved in recovering this heat. This is an important matter for it would not do to spend more money in recovering the heat than what is represented in the recovered thermal units.

(*To be continued*)

No Termites Found in Finland

The following is a certified translation of a document in the Finnish language on file at the Consulate General of Finland in New York which explains itself and which the PAPER TRADE JOURNAL has been requested to print:

Having been requested to give a statement concerning certain correspondence regarding termites found in paper shipped to the United States, I have honor to submit the following after having familiarized myself with the accompanying documents:

From the article contained in the PAPER TRADE JOURNAL concerning harmful insects ("white ants") found in and having damage a bale of paper received from Finland by Bulkley, Dutton & Co., it does not definitely appear what insect has caused the damage, even though the description would indicate that some kind of termite is here in question. From the letter of the American Paper and Pulp Association, dated September 23, 1924, it becomes clear, however, that samples of paper in question have been sent to the Federal Bureau of Entomology and also to the New York State Entomologist, and that both have ascertained that the damage was done by a termite or so-called "white ants." Hence we can consider it certain that the damage was caused by a termite and not by an ant proper.

As regards Finland, I can certify that termites are not found here, and to my knowledge no kind of termites have ever been found here, which otherwise here in Europe are only found in more southerly and warmer regions. Not once has the entomological department of the Agricultural Experiment Station, nor the agricultural and forest zoology institute of the University nor the Entomological Museum received any information of any discovery of termites in Finland, still less of damage caused by them, nor have I heard of them otherwise. For this reason I consider it certain that no termites could have been in the bale when shipped from Finland, but that they have entered it en route or at destination.

At the same time I beg to state that to my knowledge there are no other ants proper, which here in Finland make their nests in paper or paper pulp or which would cause it damage.

UUNIO SAALAS,
Acting Associate Professor of Agricultural and Forestry Zoology.

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

CLARENCE J. WEST, Chairman

Sizing

Durability of Paper Sized With Rubber Latex. J. Beckering-Vinckers. *Papierfabr.* 22, 217-219 (May 18, 1924); *Paper Trade J.* 79, No. 7, 43-46 (Aug. 14, 1924). Sheets of paper, prepared from sulphite pulp and sized with rubber latex according to the procedure given in a former article (*Papierfabr.* 22, 129-132, 1924), were tested over a period of five months to observe the axidation rate of rubber. This has previously been observed by Shaw and Carson (*India Rubber World* 68, 561, 1923), and H. Stevens (*Bull. Rubber Growers Assn.*, Oct., 1923). By means of extraction tests the gradual decrease of the rubber content in the paper was followed. At the same time the resin content increased so that the sum of the two extracts was about constant. The benzene (rubber) extract of the original sheet amounted to 2.9%; in about 3 weeks the oxidation was noticeable, and at the end of 21 weeks the rubber content decreased to 0.4%. During this period the acetone (resin) extract increased from 1.3% to 3.9. Physical tests accompanied the extractions and it was observed that the folding endurance decreased from a maximum of 268 double folds to 15; the tearing length, in meters, decreased from 4600 to 2400; and the per cent stretch from 3.8 to 1.6. These changes were much more marked as compared with paper not sized with latex. The rubber-sized sheets turned yellow, while the rubber-free paper showed no color change. The results agree with those of Shaw and Carson and furthermore indicate that the marked physical properties given to paper by the incorporation of rubber latex are lost in a comparatively short time.—J. L. P.

Rubber Latex for Paper Sizing. Jenny Beckering-Vinckers. *Papierfabr.* 22, 129-132 (Mar. 30, 1924). In experiments with rubber latex as a sizing material for paper, sulphite pulp was employed, and amounts of latex were added to give 0, 5, 10, 15, 20, and 50% rubber calculated on the air-dry pulp. The rubber was precipitated with dilute aluminum sulphate solution, an excess being avoided by testing with litmus. The sheets were hand made and dried on a steam heated drum. An interval of two days elapsed before the samples were tested. Determinations of rubber in the finished sheets, first by extraction with acetone and then with benzene, gave considerably lower values as compared to the rubber content of the beaten pulp: the higher the rubber content the greater the deviation. A stock containing 50 per cent rubber yielded a sheet with only 28 per cent rubber. The folding endurance was favorably influenced, increasing from 697 double folds with no rubber present to 2,500 folds with 15.5% rubber in the sheet. The tearing length was reduced considerably. The per cent stretch increased, as well as the sizing qualities, though the sizing was incomplete. Imperviousness to water was noticeable and also resistance to sodium hydroxide solution. Addition of rubber resulted in a yellowing of the sheets and they were sticky to the touch. For the production of waterproof papers and those requiring a high folding endurance rubber latex sizing is advantageous. It may also find application in substitutes for leather and parchment.—J. L. P.

Rosin Sizing With Hard Water. Johannes Teicher. *Zellstoff U. Papier* 4, 37-38 (Mar. 1924); *Wochbl. Papierfabr.* 55, 650-652 (Mar. 22, 1924); *Papierfabr.* 22, 181-183 (Apr. 27, 1924. The presence of salts of the alkaline-earth elements in an industrial water tends to remove the hydroxyl ion from the solution by forming a precipitate of the alkaline-earth hydroxide. The degree of dispersion of the rosin is at once effected and flocculation may occur. The unfavorable effect of hard water may be reduced by (1) removal of the hardness salts, (2) prevention of side reactions by neutralization of the hydroxyl ions with carbon dioxide, and (3) protection of the rosin suspension from side reactions by the addition of a suitable protective colloid, as glue, starch, etc. Rosin size may be prepared without alkali in the Plauson colloid mill.—J. L. P.

Engine Sizing With Rosin. J. Pelzer. Fr. pat. 567,034, *Mon. Papeterie Fran.* 55, 228-229 (May 15, 1924). The rosin soap is acidified before use. For example, 1 kilo of neutral rosin soap is dissolved in 40 l. of water and a solution of 50 g. of oxalic acid in 20 l. of water is added; the resultant milk is then added to the beater. The added acid is claimed to increase the proportion of acid salts of abietic acid, which are formed by hydrolysis on diluting the soap solution; and it is these acid salts, and not the free rosin itself, which exert a sizing action.—A. P.-C.

Colloid Studies in Rosin Sizing. R. Lorenz. *Paper Trade J.* 78, No. 23, 61-66 (June 5, 1924); No. 24, 47-52 (June 12, 1924); No. 25, 43-45 (June 19, 1924); No. 26, 52-54 (June 26, 1924); 79, No. 1, 51-55 (July 3, 1924). See *Pulp & Paper* 21, 830 (Aug. 16, 1923); *Paper Trade J.* 77, No. 8, 50-51 (Aug. 23, 1923).—A. P.-C.

Fillers and Coating Materials

Developments in the Use of China Clay. P. Rose. *Wochbl. Papierfabr.* 55, 1202-1203 (May 17, 1924). Largely statistical. Clays should be graded not only according to color but also according to the quantity of impurities present. The color is due to inorganic or organic substances. Colloidal china clay is treated magnetically, electrically, or chemically to produce a product of high quality. A plea is made for the application of colloid chemistry to the paper industry.—J. L. P.

Interesting Use for Bentonite. H. S. Spence. *Pulp & Paper* 22, 608-609 (June 12, 1924). By grinding a mixture of 20% of bentonite and 80% of asphalt with twice its weight of water in the cold in a ball mill for 2½ hr., an exceedingly smooth, stable paste was obtained, suitable for incorporating in felt, paper board, etc. —A. P.-C.

Unusual Clay Deposit Reopened. *Paper* 34, No. 7, 277-278 (June 5, 1924). Description of the mine at Bennington, Vt., which is reported to equal, or even surpass, the best English china clay, and of the process by which it will be worked.—A. P.-C.

Fillers Elbert G. Milham. *Paper Ind.* 6, 555, 557 (June, 1924); *Paper* 34, No. 9, 372-373 (June 19, 1924). Discussion of some of the more practical details connected with the use of different types of fillers.—A. P.-C.

Satin White for Coating Paper. J. H. Ryan. Eng. pat. 212,786. Satin white for coating paper and made by the interaction of alum and lime solutions, is reduced to a thin dough with water, ground in a pebble mill to remove grit, and flushed from the mill with water. The excess of water may be drawn off after settling, and a sizing solution such as casein, glue, or hydrated starch, together with an alkaline compound, such as caustic soda, added. The mass is then reground in the pebble mill. If the material is not to be used at once, the paste from the first grinding is passed to the filter, and the material is dried in a drying drum, pulverized and may be put into bags. The dry material may subsequently be soaked and the sizing and alkaline compound added to produce the coating material.—A. P.-C.

Drying

Multiple Drying Cylinder Arrangement for Paper Machines. Felix Banning, Jr. Ger. pats. 391,651 and 391,652. *Wochbl. Papierfabr.* 55, 1143-1144 (May 10, 1924). Drying cylinders are arranged

in groups or in series and dry air is introduced in the direction of the sheet so as to effect a superior drying of the paper sheet.—J. L. P.

Methods of Drying Paper. Vincent G. Hazard. *Paper* 34, No. 10, 427-428 (June 26, 1924). Brief review of the principles of drying by means is of steam heated rolls, and of recent novelties and difficulties caused by faulty ventilation.—A. P.-C.

New Patents by Canadian Manufacturers for Air Conditioning and Water Cooling Systems in Pulp and Paper Mills. *Pulp & Paper* 22, 689-690 (July 3, 1924). A description of the Lynn system for the dehumidification and recirculation of air, more particularly as applied in paper mills and printing establishments, explaining its superiority over other systems, which lies essentially in the non-clogging revolving nozzles.—A. P.-C.

Machine for Impregnating and Drying Paper and Cardboard Articles. Louis Raps. Fr. pat. 570,314. The articles are placed in a tank which is double-walled to allow of steam heating and are treated with a suitable liquid to render them waterproof, translucent, etc. They are then placed on a conveyor below which is a gutter to catch the drippings and return them to the tank. Drying is effected by means of air blown under slight pressure directly against the objects.—A. P.-C.

Analysis and Testing

Report of Committee on Analytical Methods. *Papierfabr.* 22, 177-121 (Mar. 23, 1924). A report of the committee on analytical methods at the annual meeting of the German pulp and paper chemists and engineers in March, 1924. Many of the procedures under discussion have already been published. For factory control of Oeman lime test was satisfactory. As a basis of evaluting alum for sizing purposes, the so-called "effective value" may be expressed as the ratio, in per cent, of the effective acid portion of the alum sample to 100 parts of theoretically pure alum, $Al_2(SO_4)_3 + 18\ H_2O$.—J. L. P.

Testing of Bleached Pulps. A. Klein. *Zellstoff U. Papier* 4, 85-88 (May 1924). The usual methods for testing bleached wood pulps are outlined and especial emphasis is laid on the use of the microscope. The following tests are briefly described: fiber length measurement, sedimentation test, and methods of testing for foreign materials, as copper, iron, bark, rosin, lime, sand, lead, etc.—J. L. P.

Effect of Oven Drying of the Strength of Pulp Test Sheets. E. Sutermeister. *Pulp & Paper* 22, 615 (June 12, 1924). Freedom to shrink during drying may have considerable effect on the strength of the sheet. Cameron (*Pulp & Paper* 22, 448-450, Apr. 24, 1924) found a difference of about 10% to 15% between sheets that have been air dried and oven dried; while Sutermeister finds a difference of 25% to 43% between air dried sheets and sheets dried by holding against the surface of a drier by means of a tightly stretched piece of felt.—A. P.-C.

Method for Making Hand Sheets in Matching Colors. H. L. Rammer. *Paper Ind.* 6, 696-697 (July 1924). In order to obtain proper shade comparison in color matching, the surface of the sheet should be as nearly as possible the same as that of the machine made and calendered paper. The author recommends preparing the sheet by pouring the suitably prepared and colored stock on a 9 x 5 in. piece of thick, heavy 60-mesh copper screen to form a fairly uniform layer, free from thin spots. Couch off on a piece of wet felt, cover with another wet felt, remove excess water in a letter press or in a wringer, remove the top felt, apply the sheet to a clean glass plate covered with a thin film of oil, remove the felt, dry at 90 to 100°, and peel off the paper.—A. P.-C.

Analysis of Paper. Jacques Crolard. *Pulp & Paper* 22, 564-565 (May 29, 1924); 589-590 (June 5, 1924); 615-617, 628 (June 12, 1924); *Paper* 33, No. 7, 5-8 (Dec. 5, 1923); No. 25, 11-12 (Apr. 10, 1924); 34, No. 3, 87-89 (May 8, 1924). A description of the analysis of a sample submitted for duplication, bringing out the most important points to be determined and the most satisfactory methods.—A. P.-C.

Detection of Acids in Paper. A. Schleicher and B. Rossler. *Papierfabr.* 22, 205-208 (May 11, 1924). The usual indicator tests, as litmus and congo red, and titration methods for the detection of acid in paper are subject to error and give more or less qualitative results. Experiments are described for determining the amounts of acid which may be readily detected in paper, and the conditions necessary for the rusting of metals when wrapped in paper. Tests were conducted with filter paper soaked in acids of known H-ion concentration. The limit of sensitiveness with litmus, and similarly with congo red, is 0.01-normal acid in paper. The best procedure to follow is to allow known indicator solutions (as Clark and Lub series for PH less than 7) to drop on the paper to be tested. The color range for litmus is PH 5 to 8; for congo red 3 to 5.2. Tests with steel wire wrapped in paper indicated that the PH value of acids and salts in paper should be less than 4 for corrosion to occur. Paper with a high moisture content and free from acidity may cause corrosion due to the absorption of carbon dioxide.—J. L. P.

Parchment Paper Testing. W. Herzberg. *Wochbl. Papierfabr.* 55, 1340 (May 31, 1924); *Zellstoff U. Papier* 4, 119 (June 1924); *Papierfabr.* 22, 120g-120h (June 17, 1924). True vegetable parchment is produced from unsized paper by treatment with sulphuric acid or other suitable chemicals. Such a paper should not become disintegrated by boiling for 15 minutes in a 10% sodium hydroxide solution and shaking for one minute. The ratio between the bursting strength of the dry and the wet sample should not exceed 3.4. The larger the ratio, the less is the parchmentization.—J. L. P.

Testing of Blotting Paper. W. Herzberg. *Wochl. Papierfabr.* 55, 1418 (June 7, 1924); *Zellstoff U. Papier* 4, 119 (June 1924); *Papierfabr.* 22, 120g (June 17, 1924). The Klemm blotting paper test (capillary rise in 10 min.) gave on one sample of blotting paper an average height of 88 mm., which indicated a superior quality of paper. Practical tests showed that the sample absorbed very poorly from the surface. The Dalen test (*Wochl. Papierfabr.* 54, 238, 1923) gave evidence of the quality of this sample at once and is considered preferable to the Klemm test for this kind of paper.—J. L. P.

Calibration of the Elmendorf Tearing Tester. E. Mallet and R. Marx. *Proceedings* Tech. Sec. Papermakers' Assn. Gt. Britain & Ireland, 4, Pt. 2, 212-22 (1924). The instrument is calibrated by adjusting the friction between the swinging sector and the pointer. With the pointer held against the stop, the sector should make not less than 12 complete swings before coming to rest, and with the pointer free not less than 180 swings. The system of calibration is treated mathematically, and the error in setting the zero point by adjusting the pointer stop is shown. The energy lost by the sector in making a test is taken up by the work done in tearing the sheet, energy given the pointer and work done by friction through the total angle of swing.—A. P.-C.

Specialties

Figured Cardboard. W. Baumbach. Eng. pat. 215,085. The cardboard is sprinkled, while in moist condition, and before pressing, with a mass of cellulose or other fibrous material, such as wool, straw, etc. A cloth is then laid on the cardboard, which is then dried and pressed. The outlines of the fibers will form a marbled pattern.—A. P.-C.

Process for Making Soft Pliable Paper. L. G. Thompson assignor to The Champion Coated Paper Co. U. S. pat. 1,490,523, Apr. 15, 1924. A web of paper is impregnated with 14% of gyycerin or a similar non-drying substance and then given an enamel-like coating to retain the impregnating substance so that it will be soft and pliable.—A. P.-C.

Method of Testing Board for Moisture-Proofness. Arthur R. Harvey. *Paper Trade J.* 78, No. 26, 50-52 (June 26, 1924). A sample of the board, having an area of 33 sq. in., is sealed around a triangular frame of light tin. The box thus formed contains on its bottom a piece of felt saturated with water. The sample is placed on a tray 21 in. in diameter, revolving at 17.5 r.p.m., en-

closed in an air tight chamber surrounded by a thermostatically controlled water bath kept at 77° F. The samples are allowed to season for 1 hr., weighed, run in the chamber for 2½ to 5 hr., and the loss of water determined by weighing again. Results are expressed as "% moisture-proofness," 100% being equal to no penetration of water and zero being arbitrarily taken as a penetration of 0.4 g. per sq. in. per 24 hr., representing approximately the penetration through a common grade of patent white chip back board.—A. P.-C.

Paper for Loose Leaf Ledgers. J. T. Lee. Eng. pat. 212,471. In the manufacture of sheets of paper having an area of special flexibility such as are used for loose leaf ledgers, the mold, the dandy roll or the corresponding device, has a raised strip corresponding with the form of the desired hinge. This strip may be formed by stitching on to the surface pieces of woven wire or perforated sheet metal, or,—in the case of a woven mold or the like, by pressing up part of the wire fabric.—A. P.-C.

Special Moistening of Chromo Paper. E. Arnould. *Paper Trade J.* 78, No. 14, 79-80 (Apr. 3, 1924). *See Pulp & Paper* 22, 718 (July 10, 1924); *Paper Trade J.* 79, No. 2, 45 (July 10, 1924). —A. P.-C.

Making Marbled Paper. Bogumil Zarnowiecki and Conrad Daubinet. Ger. pat. 388,095. *Wochl. Papierfabr.* 55, 666 (Mar. 22, 1924). Designs are produced by using a machine wire which contains the impression in relief.—J. L. P.

Marbled Paper. Herbert Anders. Ger. pats. 388,447 and 388,448; addition to 388,094. *Wochl. Papierfabr.* 55, 934 (Apr. 19, 1924). By the fading or deepening of colored lines or figures variable colored effects are produced in paper.—J. L. P.

Manufacture of Fancy Papers. Otto Gunther. Ger. pat. 392,612, *Papierfabr.* 22, 167, 168 (Apr. 13, 1924). The sheet of paper, colored either on one side or on both sides, is passed through engraved rolls, or between rolls furnished with paper designs. The process is carried out under high pressure.—J. L. P.

Manufacture of Fancy Paper. L. Burgo & Co. Ger. pat. 396,101, *Papierfabr.* 396,101. *Papierfabr.* 22, 263 (June 8, 1924). Two sheets are couched together, the one from a cylinder machine and the other from a wire machine.—J. L. P.

Manufacture of Colored Paper. Ernst Fues. Ger. pat. 392,325. *Papierfabr.* 22, 154 (Apr. 6, 1924). Two sides of a sheet of paper are colored in the following manner: the dyestuff solution is sprayed on one side and before the absorption is complete the sheet is made into a roll. In this way the other side of the paper is colored. Thickening materials, as starch paste, glue, dextrin, etc., are added to the dye solution to prevent too rapid absorption.—J. L. P.

Manufacture of Printed or Bronzed Crepe Paper. Firma Max Fritsch. Ger pat. 392,611. *Papierfabr.* 22, 155 (Apr. 6, 1924). In the manufactured of printed or bronzed crepe paper, in particular tissue paper, the sheet is first moistened or colored, then printed or bronzed and finally creped. The patent covers a mechanical device for the manufacture of the same.—J. L. P.

Neutral Papers. Anon. *Wochl. Papierfabr.* 55, 1203-1204 (May 17, 1924). Papers used for wrapping articles sensitive to chemicals, as photographic plates, etc., must be free from chlorine, acids, and sulphur. Aluminum sulphate is usually not dangerous, at least not in air dry paper. Paper incompletely dried on the paper machine driers may cause trouble. Black paper for photographic use should be made from a neutral stock and colored with neutral dyestuffs.—J. L. P.

Paper-Like Product and Process of Making Same. K. L. Moses. U. S. pat. 1,489,330, April 8, 1924. A highly porous sheet or web composed of relatively long fibers in a loosely matted condition is formed by a papermaking process, and is then impregnated with a rubber compound which serves as a binding agent.—A. P.-C.

Photographic Transfer Paper. F. W. Kent. U. S. pat. 1,474,596, Nov. 20, 1023. Waxed paper is first coated with an emulsion-hardening material such as chrome alum composition, and over this when dried there is applied a coating of a sensitive emulsion, e. g., an ordinary photographic gelatin emulsion.—A. P.-C.

Photographic Transfer Paper. F. W. Kent. U. S. pat. 1,466,532, Aug. 28, 1923. A mount is coated with gelatin and a hardening reagent or other liquid which when dry possesses a reflecting or shiny surface and a transfer print with a mat surface is laid upon the surface and allowed to adhere without application of pressure.—A. P.-C.

Stabilizing Carbon Paper. A. Galland. Fr. pat. 522,663, Apr. 4, 1921. The anilide of myristic acid is used to stabilize the coating of carbon paper and prevent it from crystallizing in time. The barium salt of anthranilic-azo-beta-naphthol-disulphonic acid is ground at room temperature with a liquid hydrocarbon, and 10% of the anilide of myristic acid is added to the paste, which is then ready for use in the carbonizing machine. The anilides of other fatty acids may be used.—A. P.-C.

Pulp Board. G. S. Shailor assignor to A. W. Hallenborg. U. S. pat. 1,490,541, Apr. 15, 1924. Sheets are formed of paper pulp or other fibrous pulp, and while still in a pulpy condition are treated under pressure with a binder such as Kauri, copal, shellac or resin, which is plastic when hot.—A. P.-C.

Emulsified Binder for Fibrous Materials. L. Kirschbraun. U. S. pat. 1,469,563, Oct. 2, 1923. A hot liquid binder such as coal tar, asphalt, pitch, wax, tailings, resins or drying or other oils is treated with an aqueous solution of resin soap or other soap already formed or in a state of formation from alkali and oleic acid or similar materials (2% or more or soap being used) and the emulsion thus formed is then mixed with a clay paste or similar material to form a matrix composition adapted for use with fibrous substances for the manufacture of leatherboard or similar products.—A. P.-C.

Improved Vegetable Parchment. A. Hough. U. S. pat. 1,498,797, June 24, 1924. After treatment with sulphuric acid, the paper is treated with blycol, ethylene glycol, or a polymer of glycol (e. g., diethylene glycol) at the rate of 200 lb. per ton of paper. It is claimed that the paper is kept soft and pliable, as excessive drying is prevented.—A. P.-C.

Redwood Bark Wall Board. J. K. Shaw. U. S. pat. 1,468,036, Sept. 18, 1923. Fiber board is formed of different layers of which is composed of fibers of redwood bark while other layers are formed of other vegetable fibers, e. g., wood, flax, or bagasse. The fibers of all the layers are interlaced with one another.—A. P.-C.

Paper Board and Its Manufacture. Arthur O. Bragg. *Paper* 34, No. 10, 413-417 (June 26, 1924); No. 12, 509-513 (July 10, 1924). Historical account of the development of the board industry, with a description of the numerous varieties of boards, terms, applications, and use of the different grades.—A. P.-C.

Wall Board. C. S. Bird assignor to Bird & Son. Inc. U. S. pat. 1,477,532, Dec. 18, 1923. The patent covers a building board that is substantially rigid under varying conditions. It is built up of several plies of asphalt impregnated felt, one side of the built-up board being surfaced with crushed stone, etc., and the other being covered with a sheet of paper glued to it by means of a waterproof adhesive.—A. P.-C.

Emulsion for Use in Making Building Boards. L. Kirschbraun. U. S. pat. 1,479,042, Jan. 1, 1924. A non-adhesive emulsion adapted for use in forming sheets is prepared by adding a colloidal clay suspension of appreciable viscosity and a pitchy binder such as asphalt to a body of water mixed with emulsifying and waterproofing agents, e. g., clay and asphalt, and subjecting the material to such agitation that the asphaltic particles are dispersed sufficiently that more than 95% of the emulsion will pass through a screen having openings not larger than 0.02 mm.—A. P.-C.

Reinforced Paper. P. T. Jackson. Eng. pat. 213,709. The reinforced paper has unspun vegetable fibers which are of long staple secured to it by means of a waterproof adhesive. If desired, the reinforcement can be supplemented by a backing of a paper sheet. The paper sheet is under tension during the reinforcing process.—A. P.-C.

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POLICIES FOR SUCCESSFUL OPERATION*

Work of the Industrial Executive

By B. A. Franklin, Vice-President of the Strathmore Paper Co., Mittineague, Mass.

Every industrial unit must operate along lines of definite, constantly considered policies, or choose, generally unconsciously and hopefully, between drifting on the tide of circumstance and "happenstance," or with the operation of a quasi-shrewd opportunism. That there are very many industrial executives who take one of these latter courses is very evident from any reasonable investigation.

The advantage of having definite policies is, of course, very plain, because back of every policy, if it is to be a worth while one, there must be serious consideration of tendencies, intent, desire, purpose, plan and operation, and particularly of the success in the future, which a guidance of the circumstances the policies are to control will bring. No industrial executive is ready to admit that he can afford to have his industrial unit operated without such consideration. Policies are therefore natural elements of industrial success. No wise executive can afford to do otherwise than cover his whole field of operation with them.

But no wide-reaching scheme of policies can be laid down, unless, back of it, there is a reasonable understanding of industry, its significance and its tendencies.

Industrial Beginnings

Industry is, by the very nature of its growth, a service. Far back in the beginning of the race, the caveman supplied his own wants completely. He got his living by foraging on what nature supplied. His policy was the simple one of go-out-and-get-it. This policy has never been entirely displaced, and in conjunction with other proper policies is still a successful one.

Gradually, as social necessities and obligations and the practical vision of humans, above that of animals, developed, the ideas of cooperation, specialization, and exchange were given birth and grew. Those who were hand-skilful made weapons and utensils; the hardy hunted; the experimenter found edible plants and grew them. These "producers" exchanged with each other individually or in groups, and each rendered his service in exchange for that of the other. Their life demanded no more and permitted little more.

Gradually, as production developed, and there occurred an excess of it, this excess fell into the hands of those who were shrewd and powerful in government, and even this monopolization was justified on the basis or plea of service owed. This plan of almost individual production went on for centuries. But all the while the standard of living was increasing, the idea of human rights was developing, the value of human co-operation was being made evident, and the understanding and control of natural elements and resources were growing.

The situation became too complex, with greatly increasing and wider-reaching demand, for individual production, and there sprang into existence, almost in the last century, the industrial unit, and the fundamental idea of our present-day industry. It has, of course, been greatly nurtered by the idea of profit-making, but its existence is still based upon, and absolutely dependent upon, two ideas.

The first of these ideas is, that no industrial unit can long exist except on the basis of the value of the service it renders, because no one will buy, in the long run, that which he does not conceive to be of service. The fundamental and original principle of service exchange is essentially the same, even if removed by a medium of exchange from direct application.

The second idea is that the successful operation and the very establishment, indeed, of the industrial unit, depends upon the co-operation of a number of individuals each contributing his or her resources of capital or labor.

The industrial unit becomes, then, a center of service and cooperation. It does not properly exist for profit-making alone, essential as this is for its growth and prosperity. Its profit ought to be commensurate with its service. That is the case, in the main, at least, is sometimes indisputably evidenced where a service is widely and uniquely worked out, as in the case of Henry Ford; but it would be found to be just as true in practically all successful cases when analysis is made, because, though idealistic, the principle is soundly fundamental in its extensive ramifications.

In addition there has developed in the last half-century, indeed almost in the last quarter-century, the idea that while industry is essentially co-operative internally, cooperation among industrial units in organizations externally is becoming more and more essential to success, because of increasing complexities of laws, of competition, of distribution, and of the development of management knowledge and methods.

The Future of Industry

When, then, the industrial executive gets this vision of the relation of his industrial unit and its progress to the whole of industry, and to those whom it serves, he will unquestionably find himself—if he is to operate to the maximum success and desires to meet his obligations of service—compelled to adopt definite and broad policies.

*From Management and Administration.

Undoubtedly the present-day tendency of industry is toward expansion, especially in America. Increasing invention and the control of natural forces, and increasing wealth, are raising the standard of living here beyond that of any other country. The increasing respect for human rights and the conservation and reproduction of natural resources are the limiting features of this expansion. If our natural resources are properly conserved and, in the matter of human rights, reward in proportion to service is understood and agreed upon, the fate of Greece and Rome need be no threat to our civilization.

External and Internal Policies

The policies of an industrial unit are both external and internal in their relationship and are, in many of their points of operation, evident enough.

The most evident external policy has to do with the public in the matter of markets, and the point of service arises here immediately, for the public offers in the long run no market to unserviceability. A study of the market, and of its constant and varying needs, has saved many losses and some complete failures. For instance, two concerns made an automobile accessory. In the development of the automobile this accessory became, in many cars, obsolete. One of the companies, not foreseeing this condition, failed and went out of business. The other, with a wiser executive and a definite policy of keeping in touch with the market, foresaw this obsolescence, developed other products, and went on to greater success. The latter executive had the broad idea of service to the public, and was sensitive to its wants and needs.

A manufacturer of a household article recently found his plant steadily losing money until a study of the market showed that the style and size of the article was rapidly changing. It took $50,000 of new machinery to meet the new conditions, but the plant immediately became a profit-maker after the change.

Then there are the questions of quality and price, of overproduction or underdistribution, both of the industry in general and the particular unit. A most important point of consideration, also, in this connection, has to do with the method of distribution, whether through middlemen, owned agencies, retailers, direct users, or through some combination.

In each case there arises the question of price-fixing to the public or of resale prices, and of a fair profit to agencies.

There must be settled also the question of publicity—of telling the world of the service.

All these questions are matters of the utmost importance and demand the building and maintenance of a definite policy of study, observation, and education, if continuing success is to be obtained.

The Requirements of Competition

The existence of competition demands a fixed policy. In the older days the "cut-throat" policy of decrying and underbidding all competition whenever it became threatening was much in vogue. But public service does not demand any such policy, and it has latterly become evident that it is quite in the interest of the public and of the industrial units in any given line of production to unite in trade associations so long as these are kept within legal limits.

The public gains by trade associations of this character, as for example, in the work of the paint association and its appeal to "save the surface and save all." Such trade associations have before them the development of the industry for the general good, the development of cost systems, and the reduction of costs, the improvement of processes and machinery, the development of the market and the public understanding of the trade's products, the study of the market and its needs, the building of trade customs and codes of ethics to bring about equitable and ethical conditions.

Such associations bring about the reasonable and proper growth of industry, create wealth, and yet, when operated legally, as almost universally they are, are in the interest of the public generally and the trade particularly.

Every industrial executive, in the interest of his unit, should have a definite trade association policy, and the unit loses when he does not.

What the Industrial Association Has Accomplished

The advance of civilization with it concomitants of quick and widespread communication, of development and growth of new territories, of more detailed exactment of laws and their variation in different states, has brought about not only many complexities, but has developed many influences which, though indirect, are often very distinctly harmful to individual industrial units and especially to those in given localities.

These complexities and influences and the hardships they bring about, can be met and ameliorated, not by individual units which have neither the money, influence, nor time to devote to them, but by combinations, locally or nationally, of units into industrial associations, capable of studying them, and of taking united action towards their control. The industrial executive ought to study he requirements in this direction and the value of the industrial association as a means of meeting them, and have a definite policy for his unit in relation to associations of this nature.

The work of such associations as the Associated Industries of Massachusetts, the National Association of Manufacturers, and the Industrial Conference Board operates materially in many ways in the general interest, and deserves the consideration of every executive. The work of the Associated Industries in the matter of Power for New England may bear important fruit for the future of New England industries. There are records showing that in the matter of insurance and transportation some members of the Associate Industries have been saved as high as $25,000 yearly, since this combination of manufacturers is able to maintain bureaus which can thoroughly study all phases of such matters.

The associated fruit-growers of California have done splendid work for their territory—a work that could be done successfully in no other way. The public has gained and will still gain by it, particularly the units operating together have profited and will continue to reap a mutual benefit.

The Importance of Outside Contacts

Then it must be thoroughly understood by the industrial executive that the art of management—the science, if you please—requires close contact with, and understanding of, the particular methods, processes, and operations peculiar to the trade. Beyond this, and of almost equal importance, he must keep in touch with the developments and discoveries of industrial engineering, and indeed with those of other engineering branches, which, in their principles, are applicable to all industrial units.

These developments and discoveries find their foci in engineering societies and their record in technical literature. They are of great economic value to the industrial executive and to his organization, not only from the point of view of a broadening vision and inspiration, but from that of actual cost reduction and plant improvement. This is so plain to many industrial executives it seems astonishing that it is not a matter of common knowledge and of common usefulness to all. The question of how best to obtain and keep in contact with this growing body of outside knowledge ought to be a matter of studied policy with every industrial executive, for any executive who studies even his own methods, will readily understand that they are not all of internal development, but were brought in from outside experience. There follows, then, as a matter of common sense, the policy of keeping them coming in.

Community Responsibilities

There is then the community in which the industrial unit operates, and his attitude toward this ought to be a matter of settled policy for every industrial executive.

The industrial unit owes a great deal to the community. It does not exist apart from it even when it creates it. It enjoys whatever privileges and suffers from whatever disadvantages the community offers. It is, indeed an integral part of the community. It can

readily help to improve its community by backing reasonably all movements for improvement, and, while apparently indirectly, will find an economic return in doing so. Or it can remain indifferent as too many do, and enjoy what others do, or suffer with what is has. If it wants its people happy and efficient, if it wants mechanically those things which will be of value to itself and them, and if it wants particularly to maintain a source of supply of workers of character and understanding, then the community and all movements looking toward the upbuilding of health, morals, education and character, ought to be of practical interest and policy to it, for, less than ever, can the interest of industrial units be continued within the fence or walls surrounding it.

The Industrial Organization

There are obviously many internal movements which must flow from set policies, where constructive growth and stable success are to be obtained, and indeed it is these matters which are of most interest and import to the industrial executive.

Probably the internal policy of first importance has to do with the executive organization. This is particularly so in industrial units making staple articles in open competition, not depending either on monopoly or exclusive processes. This will, of course, include the great majority of articles of production.

In the manufacture of such articles, made by known processes and highly competitive, the problem of success is ordinarily one of maintaining quality and cutting costs, and this involves certain definite elements of human ability. There must be a routine but constant planning, a careful preparation of materials and equipment, in order to create a steady flow of production through all operations without loss of labor and expense cost. Following this closely there should be a study of the running situation to check up the operation of the plan, to discover leaks, losses, wastes, delays, and departures from standards.

There is, in even the most staple manufacture, a constantly changing and improving scientific aspect. Machinery, tools, processes, methods, relations of operation are changing, requiring alert engineering ability.

Even in the most common materials, there exist chemical and physical relations, the knowledge and gaging of which make for quality and value, or the lack of which may, even without comprehension of the fact, be entailing obvious losses, or—less obvious—losses of profit that would otherwise have been made.

Assuming the main executive ability to be of the best, there is required, all down the line, a constant succession of minor executive abilities, each effectively dominant in its sphere of activity and influence.

Given the best manufacturing ability there must be capable exploitation and sales ability to keep the unit supplied with volume. There must also be abilities which will handle successfully the necessary financial problems that arise in all manufacturing operations.

Not merely to carry on, but to perpetuate, any industrial unit in successful operation, there is required a varying array of abilities which exist seldom in any one individual, but are best secured in a group of individuals of different trainings and temperaments. This group, consisting of principals and understudies, exists as the executive organization in all units, but undoubtedly best in those units where the selection, education, training and inspiration of these executives is a matter of thoughtful policy.

Labor Policies

Unquestionably the most important internal element in every industrial unit is labor, the control of which ought to be a matter of very thoughtful policies. That too many industrial executives have no very successful or definite policies in the matter of labor relations, is evidenced by the very considerable number of expensive labor disagreements; possibly also by the fact recently brought out by the Industrial Conference Board that 56 per cent of the labor of the country is operating under no reward plan, but on day work.

Day work is not essentially an unplanned method of labor operation, but unplanned labor operation is usually paid by the day, and it follows almost necessarily that neither will labor be satisfied to improve production, nor can plans be successfully or fairly put forward needing the maximum co-operation, without an adequate reward. The Ford plan, at first misunderstood as to its psychology, is, in effect, not a day work plan but a fixed reward for a compulsory fixed output.

The industrial executive wants to control the labor situation, but if he is to do so he must first have clearly in mind two fundamental ideas. The first is that in the last analysis the industrial unit is a center of service, and that those who contribute to its success have certain rights by virtue of their co-operation, even if they may in our industrial democracy quit or be discharged. From this idea may emanate a scheme of treatment which will avoid the loss of turnover and perhaps more serious labor troubles.

The second idea has been developing rapidly since the war let loose its flood of idealism, namely, a belief that a wage alone is not sufficient reward for labor. The conditions of employment and of living must be considered.

To these two ideas must be added the desire of the industrial executive to get the maximum efficient work hours continuously. Given all this and there is ample basis for the belief that only a broad and reasonable policy of the handling of labor and its relations can get the best results.

Equipment Policies

A third important matter of policy—the more important because of the latter-day development of invention and the mechanical arts—has to do with machinery and equipment. It is too often the fact, especially in our older manufacturing centers, that plants are operating with equipment that was the best in its day and is still in usable condition, which, nevertheless, from the point of view of operation cost, as compared with more modern mechanism, is a drag on the profit possibilities of the plant.

A policy of keeping in touch with the advancement of machinery and equipment, together with some calculation and comparison of the possibilities of saving by replacemnt, would unquestionably advance many industrial units in the profit-making direction. The demand of the advancing day, if it is to be more work per labor hour, must be translated into more work per machine hour.

Every industrial executive must realize that in the advancing competition, that industrial unit is going to win best where there is a knowledge of the latest processes, the best use of materials and disposal of by-products and the finest quality, consonant with market prices, and where there is likewise some comprehension of the fact that science is making tremendous progress as well in its line as in all ines. Such an understanding and comprehension can only be intelligent if it brings about a study of these things through laboratories and research, as a definite policy to be followed by the systematic utilization of the information so obtained.

Operating Methods—Expansion

There is also the important question of growth and expansion. Every industrial executive expects his business to grow, in fact tries to make it grow. Yet how many thousands of plants there are where no idea in the layout of the plant and in its arrangement seems to exist, except for the immediate future and for temporary advantage. A further-sighted policy and vision, and a real belief in the latent hope for growth, would save not only much money in building, but even considerable in future operation. If there is one fact above all others which should influence the industrial executive it is this—that the best operation of any industrial unit is that which is based on the almost invariable truth that the profits of today are the result of the actions of the past, and the successes of the future are found in the actions of today.

A most important policy of the industrial executive has to do with

his financial reserves. No industrial unit can provide all desirable facilities at the time they are decided upon. When there is immediate necessity or immediate return the executive may borrow the money. But many things can best be financed out of a reserve set up and annually increased. Hence to scatter profits in extravagant dividends is a policy which finally may cripple the business.

After all, it is well to remember that the great and important fundamental in the operation of any industrial unit is the fact that its own improvement, its strengthening, the general good of its own organization, and its service to the public, are all paramount to the profit desire, important as that is, of its stockholding interests. Operation on this basis will in the end bring the greatest financial returns.

William Whiting Speaks at Springfield

[FROM OUR REGULAR CORRESPONDENT.]

SPRINGFIELD, Mass., December 9, 1924.—The Connecticut Valley Club of Printing House Craftsmen held their annual December meeting and get together at the Hotel Cooley Saturday night, 325 attending from all up and down the valley. A feature of the banquet was the exhibition of an entire set of paper making machinery in miniature, operated by tiny electric generators, exact replicas of the actual paper mill machines.

William Whiting of the Whiting Paper Company explained the operation of the miniature paper mill and John J. White of the Whitmore Manufacturing Company acted as toastmaster. It was hoped to have William F. Whiting, President of the Whiting Paper Company and William L. Rankle of New York City as guests but they were unable to attend. Guests attending included Edward Calkins of Boston, president of the International Club of Printing House Craftsmen, and former Mayor Holmes of Worcester. Some 30 stereopticon slides were also used in explaining the art of making fine writing papers. The committees in charge consisted of the following: General Chairman, Stephen F. Bible; arrangements, Charles B. Porter, chairman; reception, James A. Murphy, chairman; entertainment, E. J. Cobb, chairman; publicity, Harry M. Lehmann, chairman.

It was announced that another big night would be Feb. 28 when the Miehle Printing Press and Manufacturing Company would have a new Miehle product in full operation.

Boston Market Slightly Improved

BOSTON, Mass., December 8, 1924.—Paper business this week was pretty good in Boston market but was composed of many small orders and covered a wide variety of items. This simply expresses the tendency at this time of year to consider the fact that inventory periods are close at hand and while it is desired by many to have stock on hand for holiday sale, it is not desired to carry over any additional stock into the new year.

Trade sentiment is good and everywhere there seems to be the thought that "with the New Year, things are going to hum." New sales plans are being considered and without question many firms are going to make a strenuous try to get back into the old order of things.

Paper stocks seem to be easing off a little from their September advances. There seems to be plenty of stock available when needed but just how long that condition would continue with increased demand is a problem. Rags are commanding special prices for each lot offered. The past week has seen quite a lot of new rag cuttings both in white and dark cottons from London but all these imported rags do not affect the market in the slightest for the supply is far below the demand.

In general the trade must be said to be looking ahead to a new era of prosperity. Losses have unquestionably resulted in many lines for the year but these are being written off and everywhere the thought is that 1925 is another year and the determination to make it a big success is apparent.

Obituary

Brian G. Hughes

Brian G. Hughes, president of the Dollar Savings Bank and founder of the paper box manufacturing plant of B. G. Hughes & Bro. at 133 Mulberry street, died on Monday at his home in Monroe, N. Y. He was 75 years of age and had retained active interest in the bank and his other business connections right up to the time of his death. Mr. Hughes was widely known for his philanthropic acts and for an irrepressible fondness for practical jokes. Many of the latter made him famous. His advent in this country was heralded by his canary hoax. He caught birds in Central Park, painted them yellow and sold them as canaries. From that time on his friends never ceased to be victims of his pranks. He had a town home at 1984 Madison avenue. He is survived by two daughters and a son, Brian G. Hughes, Jr., who is in charge of the box manufacturing plant founded by his father at 133 Mulberry street.

W. H. Hoffman

SYRACUSE, N. Y., December 8, 1924.—William H. Hoffman, aged 79 years, formerly president of the Hoffman-Youman's Mills now the Richard S. Hoffman Company, Inc. at Baldwinsville, N. Y., died in a hospital here December 7 after a long illness. A pioneer in oil development in this country. Mr. Hoffman was one of the first men to sink an oil well in 1861 at Oil City, Pa. He held big oil interests at Tulsa, Okla. He was a former supervisor and at one time was Sheriff of Butler county, Pa.

Duty on Japanese Tissue

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., December 3, 1924.—The Customs Service has held that Japanese tissue copying paper known as "Gifu" is dutiable at six cents per pound and 15 per cent ad valorem.

Assistant Secretary of the Treasury Moss has sent a communication to the Appraiser of Merchandise at Boston in connection with the variance in practice between the Boston office and the office of the Appraiser in New York in the classification of hand made copying paper which is described as a Japanese tissue copying paper, called as stated above "Gifu."

It appears from the correspondence that the Boston office returns this paper as a hand made paper dutiable at three cents per pound and 15 per cent ad valorem under paragraph 1307 whereas New York returns the merchandise at six cents per pound and 15 per cent ad valorem.

The Appraiser at New York states that the paper is in fact hand made but as it weighed under seven pounds to the ream of 180,000 square inches it is not dutiable under paragraph 1307 as this paragraph is limited to hand made papers weighing seven pounds or over per ream. The Secretary concludes:

"The Department accordingly approves the practice in New York in returning this merchandise as subject to duty under paragraph 1304 at the rate of six cent per pound and 15 per cent ad valorem."

Conveyors Corporation Bulletin

The Conveyors Corporation of America, 326 West Madison street, Chicago, has issued an eight-page bulletin which describes the American High Duty Conveyor.

This conveyor is designed to handle ashes and cinders from large power plants and accordingly its tonnage capacity per hour is unusually high. It is built with a 9-inch conduit through which the ashes pass.

The bulletin describes the various exclusive features which this system of ash disposal possesses and halftones are used to illustrate the booklet. Copies of the bulletin may be obtained on request.

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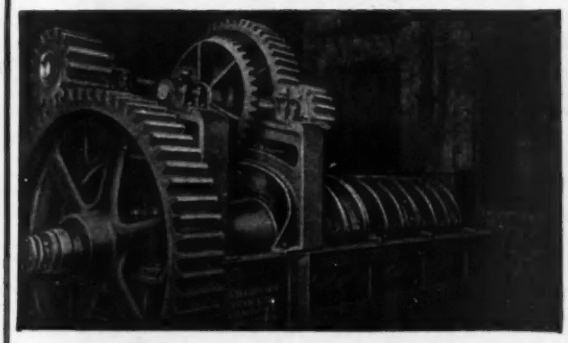

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PAPER BIDS AND AWARDS FOR U. S. GOVERNMENT

Joint Congressional Printing Committee to Receive Bids January 26 for More Than 41,000,000 Pounds of Various Kinds of Paper, for Both Six Months and One Year Periods, for the Fiscal Year Beginning March 1, 1925—Government Printing Office to Receive Bids December 12 for 23,100 Pounds of Double Coated Book Paper—Bids and Awards on Paper for Other Departments.

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., December 8, 1924.—The Joint Congressional Committee on Printing will receive bids on January 26 for more than 41,000,000 pounds, for both six months and one year, for the fiscal year beginning March 1, 1925.

The approximate estimated quantities follow:

3,040,000 pounds standard news print paper.
9,115,000 pounds machine-finish book paper.
1,000,000 pounds plant-fiber machine-finish book paper.
80,000 pounds antique book paper.
150,000 pounds light-weight machine-finish book paper.
2,690,000 pounds supercalendered book paper.
200,000 pounds halftone book paper.
335,000 pounds coated book paper.
2,200,000 pounds mimeograph paper.
500,000 pounds U S M O safety writing paper.
8,000 pounds U S M O writing paper.
4,000 pounds safety writing paper.
1,720,000 pounds writing paper.
350,000 pounds map paper.
630,000 pounds manifold paper.
50,000 pounds onionskin paper.
5,662,000 pounds bond paper.
4,000 pounds parchment deed paper.
940,000 pounds ledger paper.
5,700 pounds tissue paper.
380,000 pounds cover paper.
4,000 sheets cloth-lined cover paper.
1,322,000 pounds wrapping paper.
450,000 pounds manila tag board.
70,000 pounds cardboard.
865,000 pound bristol board.
7,500,000 pounds U. S. Postal Card bristol board.
22,000 pounds index bristol board.
6,000 pounds paraffin paper.
3,250 pounds gummed paper.
110,000 pounds blotting paper.
5,500 pounds stereotype molding paper.
20,000 pounds offset paper.
20,000 pounds oiled manila tympan paper.
3,500 pounds plate-wiping paper.
6,000 pounds back-lining paper, for case-making.
22,000 pounds pressboard.
500 pounds news board.
550,000 pounds chip or straw board.
60,000 pounds box board.
630,000 pounds binder's board.
20,000 pounds trunk board.

Bids on Paper Asked For

The Government Printing Office will receive bids on December 12, for 23,100 lbs. (300 reams) of 24 x 38 double coated book paper.

The Government Printing Office will receive bids on December 15 for 32,250 pounds (1,000 reams) of various sizes white glazed manifold bond paper. The Printing Office will also receive bids on the same date for 1,800 lbs. (200 reams) of 21 x 32—9 white tissue paper.

The Government Printing Office will receive bids on December 12 for 19,700 pounds (200 reams) of various sizes sulphite manila paper. Bids will also be opened on the same date for 6,000 pounds of the same in 18" rolls.

The Government Printing Office will receive bids on December 15 for 150,000 pounds of calendered manila tag board in 26 inch rolls. Bids will also be received on the same date for 50,000 pounds (600 reams) of 26 x 38 inch white S. & S. C. lithograph paper and for 3,600 pounds (200 reams) of 22 x 34—No. 9, 18 pounds, blue glazed manifold bond paper.

The Printing Office has received the following bids for 29,975 pounds of various sizes white lithograph finish map paper: R. P. Andrews Paper Company, at 16 cents per pound; Barton, Duer & Koch Paper Company, at 14.65 cents; Old Dominion Paper Company, at 19.9 cents; Dobler & Mudge, at 15 cents; and American Writing Paper Company, at 17 cents.

The following bids were also received for 7,400 pounds of 24 x 38—74, sulphite manila paper: Samuel S. Alcorn, at 9 cents per pound; Dobler & Mudge, at 9 cents; Lindemeyr & Harker, at 6.9 cents; R. P. Andrews Paper Company, at 7.24 cents; Old Dominion Paper Company, at 6.4 cents and 7.4 cents; and Mathers-Lamm Paper Company, at 5.9 cents and 7.1 cents.

Bids on Paper Received

The Government Printing Office has received the following bids for 31,400 pounds of various sizes, flat kraft wrapping paper and for 18,000 pounds of the same in 36 inch rolls:

Whitaker Paper Company 5.43 cents per pound; E. S. Walton and Co., 5.6 cents; Reese & Reese, 5.41 cents and 5.9 cents; American Writing Paper Company, 7 cents; R. J. Terry Company, 6.8 cents; Mathers Lamm Paper Company, 5.38 cents; Maurice O'Meara Company, 5.75 cents; Republic Bag and Paper Company, 5.18 cents and 5.615 cents; and T. A. Cantwell & Co., 5.65 cents and 6.18 cents.

The following bids were received for 1,400 pounds of plate wiping paper in 4 and 8 inch rolls: R. P. Andrews Paper Company, 8.1 cents; Mathers Lamm Paper Company, 7.5 cents and 7.4 cents; Old Dominion Paper Company, 7.9 cents and 7.4 cents; Reese & Reese, 7.3 cents; Dobler & Mudge, 8 cents; T. A. Cantwell & Co., 9 cents; Barton, Duer & Koch, 7.75 and 8 cents; and Whitaker Paper Company, 8.46 cents.

The Printing Office has also received the following bids for 33,050 pounds of various sizes white lithograph finish map paper: Aetna Paper Company, 16.97 cents; Barton, Duer & Koch, 19.2 cents; American Writing Paper Company, 26.5 cents; Maurice O'Meara, 23 cents; Dobler & Mudge, 19.75 cents; Reese & Reese, 19.6 cents; and Old Dominion Paper Company, 19.9 cents.

The Printing Office will receive bids on December 12 for 5,200 pounds (200 reams) of 22 x 34—26 No. 13, blue sulphite writing paper.

The Government Printing Office has received the following bids for 2,400 pounds of 17 x 22" 24 fine white glazed bond paper: R. P. Andrews Paper Company, 35 cents per pound; Livingston Inc., 32 cents; Mathers-Lamm Paper Company, 29.5 cents; American Writing Paper Company, 40 cents; Old Dominion Paper Company, 27.98 cents; Reese & Reese, 27.65 cents.

The following bids were also received for 2,400 pounds of 33 x 34—96, No. 32, parchment deed paper: R. P. Andrews Paper Company, 39.5 cents; Barton, Duer & Koch, 33.95 cents; Livingston Inc., 40 cents; Mathers-Lamm Paper Company, 47.5 cents and Reese & Reese, 27.48 cents.

Paper Contracts Awarded

The Allied Paper Mills have been awarded the contract for furnishing the Government Printing Office with 10,000 pounds, (278

(Continued on page 68)

A Remarkable Range of Grades, Textures and Weights

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Paper Manufacturers who carefully check manufacturing costs, and also strive to produce more and better paper at a lower cost per ton, prefer the unvarying quality and long service of ORR felts. A trial of them will bring about a preference that will be lasting.

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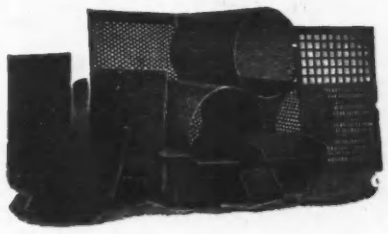

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NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING DECEMBER 6, 1924

SUMMARY

News print.....288 bls. 1,057 rolls.
Printing paper.....255 cs., 513 bls.
Cigarette paper.....2,885 cs.
Wall paper.....236 bls., 5 cs.
Hangings.....27 bls., 7 cs.
Silk paper.....11 cs.
Metal paper.....3 cs.
Basic paper.....50 cs.
Packing paper.....854 bls., 4 cs.
Wrapping paper.....315 bls., 459 rolls, 7 cs.
Colored paper.....15 cs.
Decalcomania paper.....7 cs.
Transfer paper.....15 cs.
Writing paper.....27 cs.
Filter paper.....5 cs.
Drawing paper.....4 cs.
Kraft paper.....130 rolls.
Miscellaneous paper..72 cs., 1,209 bls., 4,421 rolls.

CIGARETTE PAPER

American Tobacco Co., Zarembo, Bordeaux, 1,600 cs.
De Manduit Paper Corp., Zarembo, St. Nazaire, 289 cs.
R. J. Reynolds Tobacco Co., by same, 920 cs.
Equitable Trust Co., M. Washington, Trieste, 5 cs.
P. J. Schweitzer, Rochambeau, Havre, 53 cs.
The Surbrug Co., Paris, Havre, 18 cs.

WALL PAPER

F. J. Emmerich, Mount Clay, Hamburg, 26 bls.
G. J. Hanken Co., by same, 3 bls.
G. J. Hanken Co., by same, 4 cs.
J. W. Hampton, Jr., & Co., Westerdyk, Rotterdam, 168 bls.
The Prager Co., by same, 24 bls.
R. F. Downing & Co., Inc., Mesaba, London, 15 bls.
R. F. Downing & Co., Inc., by same, 1 cs.

PAPER HANGINGS

W. H. S. Lloyd & Co., Mesaba, London, 27 bls.
W. H. S. Lloyd & Co., by same, 7 cs.

NEWS PRINT

J. P. Heffernan Paper Co., M. Washington, Trieste, 288 bls.
M. Gottesman & Co., Inc., Drotningholm, Gothenburg, 493 rolls.
M. Gottesman & Co., Inc., Bogen, Gefle, 274 rolls.
H. Reeve Angel & Co., Inc., Pr. Roosevelt, Bremen, 290 rolls.

PRINTING PAPER

H. Reeve Angel & Co., Inc., Pr. Roosevelt, Bremen, 255 cs.
H. Reeve Angel & Co., Inc., by same, 35 bls.
J. J. Murphy Paper Co., Mesaba, Hamburg, 157 bls.
M. O'Meara Co., Stuttgart, Bremen, 66 bls.
C. G. Keferstein, M. Washington, Trieste, 5 bls.

SILK PAPER

Phoenix Shipping Co., Westerdyk, Rotterdam, 11 cs.

METAL PAPER

Hensel, Bruckman & Lorbacher, Pr. Roosevelt, Bremen, 3 cs.

BASIC PAPER

Globe Shipping Co., Pr. Roosevelt, Bremen, 50 cs.

PACKING PAPER

J. P. Heffernan Paper Co., Orduna, Hamburg, 807 bls.
Chemical National Bank, Mt. Clay, Hamburg, 41 bls.
Hensel, Bruckman & Lorbacher, Westerdyk, Rotterdam, 4 cs.
A. E. MacAdam, Norefjord, Kristiania, 6 bls.
Hensel, Bruckman & Lorbacher, Veendam, Rotterdam, 2 cs.

WRAPPING PAPER

C. K. MacAlpine Co., Drottningholm, Gothenburg, 84 bls.
C. K. MacAlpine Co., by same, 459 rolls.
Wilkinson Bros. & Co., Inc., Norefjord, Bergen, 66 bls.
Chemical National Bank, Mt. Clay, Hamburg, 165 bls.
Chemical National Bank, by same, 7 cs.

COLORED PAPER

C. G. Keferstein, Mt. Clay, Hamburg, 7 cs.
W. Schall & Co., by same, 4 cs.
Phoenix Shipping Co., Stuttgart, Bremen, 4 cs.

DECALCOMANIA PAPER

Phoenix Shipping Co., Stuttgart, Bremen, 2 cs.
C. W. Sellers, by same, 5 cs.

TRANSFER PAPER

C. B. Richard & Co., Orduna, Hamburg, 15 cs.

WRITING PAPER

Coenca, Morrison & Co., Rochambeau, Havre, 5 cs.
Sternberg & Co., Patria, Marseilles, 16 cs.
Keuffel & Esser, by same, 6 cs.

FILTER PAPER

H. Reeve Angel & Co., Inc., Mesaba, Hamburg, 5 cs.

DRAWING PAPER

H. Reeve Angel & Co., Inc., Mesaba, Hamburg, 4 cs.

KRAFT PAPER

Chatham & Phoenix National Bank, Drottningholm, Gothenburg, 130 rolls.

PAPER

E. H. Sergeant Co., Drottningholm, Gothenburg, 1 cs.
Gilbert Paper Co., by same, 86 bls.
Gilbert Paper Co., by same, 122 rolls.
The Borregaard Co., by same, 3,862 rolls.
The Borregaard Co., by same, 902 bls.
M. O'Meara Co., by same, 221 bls.
M. O'Meara Co., by same, 66 rolls.
Du Pont Cellophane Co., Rochambeau, Havre, 2 cs.
Japan Paper Co., Colombo, Genoa, 8 cs.
M. O'Meara Co., Veendam, Rotterdam, 418 rolls.
E. Dietzgen & Co., Mt. Clay, Hamburg, 11 cs.
McFlinn & Co., Olympic, Havre, 3 cs.
C. G. Keferstein, Mesaba, Hamburg, 371 rolls.
Whiting & Patterson Co., Inc., Paris, Havre, 5 cs.
P. J. Schweitzer, by same, 26 cs.
Coenca, Morrison & Co., by same, 3 cs.
Guibout Freres, by same, 13 cs.

RAGS, BAGGING, ETC.

E. J. Keller Co., Inc., Mt. Clay, Hamburg, 393 bls. rags.
E. J. Keller Co., by same, 53 bls. new cuttings.
E. J. Keller Co., Inc., by same, 115 bls. rag pulp.
E. J. Keller Co., Inc., by same, 40 bls. bagging.
Katzenstein & Keene, Inc., by same, 26 bls. bagging.
E. Butterworth & Co., Inc., Westerdyk, Rotterdam, 22 bls. bagging.
Darmstadt, Scott & Co., by same, 25 bls. rags.
G. M. Graves & Co., by same, 45 bls. rags.
Chemical National Bank, by same, 79 bls. rags.
S. Birkenstein & Sons, by same, 30 bls. bagging.
E. J. Keller Co., Inc., by same, 109 bls. bagging.
E. J. Keller Co., Inc., by same, 119 bls. rags.
E. J. Keller Co., Inc., Westerdyk, Amsterdam, 52 bls. rags.
M. O'Meara Co., Westerdyk, Rotterdam, 3 bls. cotton waste.
P. Berlowitz, by same, 129 bls. rags.
Castle & Overton, Inc., by same, 55 bls. rags.
R. Blank, by same, 27 bls. rags.
A. W. Fenton, Inc., by same, 22 bls. rags.
Stone Bros. Co., by same, 348 bls. rags.
M. O'Meara Co., Orizaba, Havana, 54 bls. rags.
E. J. Keller Co., Inc., Rochambeau, Rouen, 54 bls. bagging.
Belgian Bank, Rochambeau, Havre, 36 bls. bagging.
Salomon Bros. & Co., Silnerelm, Marseilles, 180 bls. rags.
Castle & Overton, Inc., Silnerelm, Alexandria, 33 bls. rags.
Castle & Overton, Inc., by same, 25 bls. bagging.
Philadelphia National Bank, by same, 52 bls. rags.
Salomon Bros. & Co., Asia, Alger, 128 bls. rags.
Stone Bros. Co., by same, 242 bls. rags.
Textile Waste Material Co., Asia, Marseilles, 100 bls. rags.
Irving Bank-Columbia Trust Co., Asia, Constantinople, 369 bls. rags.
L. H. Abenheimer, Mesaba, Hamburg, 181 bls. rags.
Brown Bros. & Co., by same, 161 bls. rags.
Chase National Bank, Stuttgart, Bremen, 41 bls. rags.
National City Bank, by same, 58 bls. rags.
First National Bank of Boston, Paris, Havre, 45 bls. rags.
E. J. Keller Co., Inc., Veendam, Rotterdam, 219 bls. rags.
E. J. Keller Co., Inc., by same, 43 bls. bagging.
Castle & Overton, Inc., by same, 129 bls. rags.
R. Blank, by same, 105 bls. rags.
Stone Bros. Co., by same, 127 bls. bagging.
Atterbury & McKelvey, by same, 91 bls. rags.
Whaling Waste Products Corp., by same, 84 bls. rags.
S. Birkenstein & Sons, by same, 48 bls. bagging.
D. M. Hicks, by same, 106 bls. bagging.
D. M. Hicks, by same, 38 bls. rags.
P. Berlowitz, by same, 167 bls. rags.
P. Berlowitz, by same, 86 bls. bagging.
Union National Bank, Blair, Alexandria, 114 bls. rags.
Salomon Bros. & Co., Blair, Marseilles, 54 bls. rags.
Castle & Overton, Inc., Pietro Gori, Leghorn, 108 bls. rags.
Katzenstein & Keene, Inc., Mercier, Antwerp, 230 bls. rags.
E. J. Keller Co., Inc., Pietro Gori, Genoa, 95 bls. rags.
E. J. Keller Co., Inc., Francisco, Antwerp, 44 bls. rags.
E. J. Keller Co., Inc., Andania, Hamburg, 213 bls. rags.

OLD ROPE

Brown Bros. & Co., Veendam, Rotterdam, 282 coils.
Brown Bros. & Co., Westerdyk, Rotterdam, 111 coils.
International Purchasing Co., by same, 62 coils.
Stone Bros. Co., by same, 53 coils.
Yglesias & Co., Orizaba, Havana, 4 bales.
Brown Bros. & Co., Hellen, Huelva, 79 bales.
L. H. Abenheimer, Hellen, Barcelona, 51 coils.
Ellermans' Wilson Line, Francisco, Hull, 34 coils.
Ellermans' Wilson Line, by same, 33 bales.
Brown Bros. & Co., Stuttgart, Bremen, 19 bales.
Brown Bros. & Co., by same, 32 coils.

WOOD PULP

Castle & Overton, Inc., Orduna, Hamburg, 825 bls. wood pulp.
Ira L. Beebe & Co., by same, 1,435 bls. wood pulp.
W. Hartman & Co., M. Washington, Trieste, 312 bls. wood pulp.
Scandinavian Pulp Agency, Inc., Drottningholm, Gothenburg, 625 bls. sulphate pulp.

(*Continued on page 52*)

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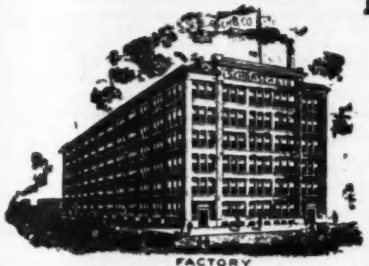

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Mills at Tuciansky, Sv. Martin

Imports of Paper and Paper Stock

(*Continued from page 60*)

E. M. Sergeant & Co., Inc., by same, 762 bls. sulphite pulp.
Independent Fibre Co., by same, 1,000 bls. sulphite pulp.
J. Andersen & Co., Norefjord, Sarpsborg, 1,500 bls., 254 tons sulphite pulp.
M. Gottesman & Co., Inc., Mesaba, Hamburg, 863 bls wood pulp.
M. Gottesman & Co., Inc., Annersoise, Stockholm, 8,265 bls., 1,653 tons wood pulp.
Hartig Pulp Co., Inc., Stuttgart, Bremen, 2,000 bls. sulphate pulp.
Hartig Pulp Co., Inc., Bogen, Gefle, 750 bls, 151 tons sulphite pulp.
Pagel, Horton & Co., Inc., by same, 3,625 bls., 683 tons sulphite pulp.
J. Andersen & Co., Bogen, Iggesund, 10,200 bls. sulphite pulp.
Lagerloef Trading Co., Inc., Argosy, 5,307 bls., 875 tons chemical wood pulp.
Pagel, Horton & Co., Inc., Argosy, Hornefors, 1,500 bls., 250 tons sulphite pulp.
Pagel, Horton & Co., Inc., Argosy, Donisjo, 900 bls., 150 tons sulphite pulp.
Nilsen, Lyons & Co., Inc., Argosy, Kotka, 600 bls., 100 tons sulphate pulp.
Bulkley, Dunton & Co., Muenchen, 2,900 bls. wood pulp.
Bulkley, Dunton & Co., Stuttgart, 2,625 bls. wood pulp.
Bulkley, Dunton & Co., Bogen, 3,625 bls. wood pulp.
Johaneson, Wales & Sparre, Inc., Frederick VIII, Copenhagen, 250 bls. sulphite pulp.

PHILADELPHIA IMPORTS

WEEK ENDING DECEMBER 6, 1924

Paper House of Pennsylvania, Argosy, Kotka, 980 rolls news print.
C. K. MacAlpine Co., Idarwald, Hamburg, 43 rolls wrapping paper.
Stone Bros. Co., Zarembo, St. Nazaire, 246 bls. rags.
Goldman, Sachs & Co., by same, 43 bls. rags.
E. J. Keller Co., Inc., Zarembo, Bordeaux, 295 bls. rags.
Philadelphia National Bank, by same, 61 bls. rags.
Salomon Bros. & Co., by same, 188 bls. rags.
E. J. Keller Co., Inc., Innoko, Mannheim, 121 bls. rags.
E. J. Keller Co., Inc., Innoko, Rotterdam, 63 bls. rags.
E. J. Keller Co., Inc., Binnendyk, Rotterdam, 49 bls. rags.
E. J. Keller Co., Inc., Binnendyk, Amsterdam, 469 bls. rags.
E. J. Keller Co., Inc., by same, 73 bls. new cuttings.
E. J. Keller Co., Inc., by same, 93 bls. bagging.
Castle & Overton, Inc., Porta, Hamburg, 84 bls. rags.
Castle & Overton, Inc., Seattle Spirit, Hamburg, 163 bls. rags.
Castle & Overton, Inc., Hektor, Barcelona, 173 bls. rags.
Castle & Overton, Inc., Recca, Italy, 342 bls. rags.
Castle & Overton, Inc., Arkansas, Copenhagen, 186 bls. rags.
Castle & Overton, Inc., Innoko, Rotterdam, 36 bls. rags.
Castle & Overton, Inc., M. Shipper, England, 60 bls. rags.
Katzenstein & Keene, Inc., Mariner, London, 306 bls. rags.
True & McClelland, Zarembo, St. Nazaire, 77 coils old rope.
Pagel, Horton & Co., Inc., Argosy, Harnefors, 1,200 bls., 203 tons sulphite pulp.
Nilsen, Lyon & Co., Inc., Argosy, Kotka, 570 bls., 95 tons sulphate pulp.
Parsons & Whittemore, by same, 164 bls., 27 tons dry pulp.
M. Gottesman & Co., Inc., Pajala, Stockholm, 4,000 bls. wood pulp.
Castle & Overton, Inc., Marga, Norway, 4,820 bls. wood pulp.
Lagerloef Trading Co., Inc., 5,737 bls., 1,041 tons chemical wood pulp.

BOSTON IMPORTS

WEEK ENDING DECEMBER 6, 1924

Lagerloef Trading Co., Inc., Nateror, 7,572 bls., 1,331 tons chemical wood pulp.
Equitable Trust Co., Vasconia, London, 52 bls. old rope for paper making.
Second National Bank, Canadian Ranger, Hamburg, 101 bls. old rags.
Geo. M. Graves, by same, 38 bls. old rags.
Lawrence Kind, Siberian Prince, Liverpool, 98 coils old white rope for paper making.
E. Butterworth, Binnendyk, Rotterdam, 47 bls. white lace curtains for paper making.
T. D. Downing, by same, 38 bls. white cotton rags.
On order, by same, 54 bls. old bagging for paper-making.
E. Butterworth & Co., by same, 93 bls. old burlap, 69 bls. new rags.
Stone Bros. & Co., by same, 74 bls. white lace curtains for paper making.
Robert Blank, by same, 57 bls. dark cottons for paper making, 77 bls. Luney cloth for paper making.
E. J. Keller & Co., Inc., by same, 73 bls. new cotton rags.
T. D. Downing, by same, 620 bls. old rags.
E. J. Keller Co., Inc., 93 bls. mixed bagging for paper making; 152 bls. dark cottons for paper making.
Y. L. Smythe & Co., 158 cs. printing papers.
E. J. Keller & Co., Inc., by same, 34 bls. old rags.
The Borregaard Co., by same, 5 bls. paper.
Robert Wilson Paper Corp., Anacortes, London, 27 reels printing paper.
On order, by same, 234 bls. old rags.
A. H. Searle, Inc., by same, 76 bls. old rags.
S. Birkenstein & Sons Co., by same, 70 bls. old rags.
Second National Bank, Missouri, Antwerp, 346 bls. old rags.
A. W. Finton, by same, 39 bls. old rags.
T. D. Downing, by same, 20 bls. old rags.
On order, by same, 23 bls. old rags.
Equitable Trust Co., by same, 131 bls. old rags.
On order, by same, 42 bls. old rags.
French Worsted Co., by same, 24 cs. paper tubes.
National City Bank, by same, 590 bls. old rags.
American Express Co., Capulin, London, 36 bls new rags.
Baring Bros., Ltd., by same, 67 bls. waste paper.
Philadelphia National Bank, by same, 41 bls. dark cottons for paper making.
Guaranty Trust Co., by same, 28 bls. old rags.
Philadelphia National Bank, by same, 150 bls. old rags.
American Express Co., West Lake, London, 168 bls. old rags.
Bulkley, Dunton & Co., Copenhagen, 1,500 bls. wood pulp.
Bulkley, Dunton & Co., West Campgow, 1,310 bls. wood pulp.
Bulkley, Dunton & Co., Bogen, 625 bls. wood pulp.
Bulkley, Dunton & Co., Milos, 3,500 bls. wood pulp.

BALTIMORE IMPORTS

WEEK ENDING DECEMBER 6, 1924

C. K. MacAlphine Co., Idarwald, Hamburg, 303 bls. wrapping paper.
Pagel, Horton & Co., Inc., St. Anthony, Umea, 12,862 bls., 1,893 tons sulphate pulp.
Pagel, Horton & Co., Inc., St. Anthony, Ornskoldwik, 8,196 bls., 1,387 tons sulphate pulp.
Hornell & Donaldson, Inc., St. Anthony, Umea, 1,400 bls. 203 tons sulphate pulp.
M. Gottesman & Co., Inc., Annersoise, Stockholm, 10,000 bls., 2,000 tons wood pulp.
Castle & Overton, Inc., Westerner, Rotterdam, 630 bls. wood pulp.
Castle & Overton, Germany, 600 bls. wood pulp.
M. Gottesman & Co., Inc., Mexicano, Christiania, 2,728 bls. wood pulp.
M. Gottesman & Co., Inc., Citos, Stockholm, 1,500 bls. wood pulp.
M. Gottesman & Co., Inc., Nordhval, Stockholm, 3,000 bls.
Bulkley, Dunton & Co., West Campgow, 1,310 bls. wood pulp.
Bulkley, Dunton & Co., Hameln, 125 bls. wood pulp.
Johaneson, Wales & Sparre, Inc., Dania, Gothenburg, 1,125 bls. Kraft pulp.
Johaneson, Wales & Sparre, Inc., Citos, Sundsvall, 1,360 bls. sulphite pulp.

NORFOLK IMPORTS

WEEK ENDING DECEMBER 6, 1924

Castle & Overton, Inc., Westerner, Rotterdam, 636 bls. wood pulp.
Johaneson, Wales, & Sparre, Carolina, Kramfors, 6,750 bls. Kraft pulp, 4,410 sulphite pulp.

PORTLAND IMPORTS

WEEK ENDING DECEMBER 6, 1924

The Borregaard Co., Inc., Norefjord, Sarpsborg, 1,200 bls., 203 tons sulphate pulp.
Atterbury, McKelvey, by same, 600 bls., 101 tons sulphite pulp.
Poland Paper Co., by same, 2,700 bls., 558 tons sulphite pulp.
Bulkley, Dunton & Co., Jersback, 8,975 bls. wood pulp.

NEWPORT NEWS IMPORTS

WEEK ENDING DECEMBER 6, 1924

M. Gottesman Co., Inc., Annersoise, Stockholm, 2,500 bls., 500 tons wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING DECEMBER 6, 1924

Castle & Overton, Inc., Maasdam, Rotterdam, 39 bls. rags.
Castle & Overton, Inc., Ostende, Antwerp, 833 bls. rags.
Castle & Overton, Inc., Cliffwood, Rotterdam, 52 bls. rags.
Castle & Overton, Inc., Spaarndam, Rotterdam, 359 bls. rags.
Castle & Overton, Inc., by same, 80 bls. bagging.

GALVESTON IMPORTS

WEEK ENDING DECEMBER 6, 1924

E. J. Keller Co., Inc., Mosella, Rotterdam, 51 bls. rags.

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Market Quotations

PAPER AND PULP TRADE SECURITIES CLOSING PRICES TUESDAY, DEC. 9, 1924. Quoted by Hepburn & Co., No. 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	ASKED
Abitibi Power and Paper, Montreal, Gen 6s 1940	98	100*
Advance Bag and Paper, 7s 1943	97	100*
Aroostook Pulp and Paper, 6s 1925	99	...
Bastrop Pulp and Paper, 7½s 1932	98	100*
Brompton Pulp and Paper, Montreal, 6s 1927	95	95
Beljo Canadian Paper, Montreal, 6s 1943	97	99
Bedford Pulp and Paper, 6½s 1942	96	...
Berkshire Hills Paper Co., 8s 1941	...	100
Beaver Board, N. Y. Curb, 8s 1933	87	89
Beaver Products Corp., 7½s 1942	102	104
Brown Paper Co., 8s 1931	102	105*
Berlin Mills, 5s 1931	96	99
Bryant Paper Co., 6s 1942	97	100
Brown Company Serial, 6s 1925-43	97	100
Central Paper, 6½s 1925-42	90	95
Cape Breton Pulp and Paper, 6s 1932	100	102
Carthage Sulphite Pulp and Paper, 8s 1941	40	50
Champion Coated Paper Co., Cincinnati, 6s 1924-34	...	102
Champion Fibre Co. Notes, Cincinnati, 8s 1930	102	...
Cherry River Paper, 5s 1929	97	100*
Chicoutimi Pulp Co., Montreal, 6s 1942	63	...
Donnaconna Paper Co., Ltd., 6s 1940	98	100
Eddy Paper, 7s 1931	96	...
Eagle Paper, 6½s 1932	96	100
Escanaba Paper, 6s 1933	84	88
Fox River Paper, 7s 1931	100	...
Fort Orange Paper Co, 7s 1942	90	...
Eddy Paper Co., 7½s 1931	95	98
Gair (Robert) Co., N. Y. Curb, 7s 1937	98	100
Gilbert Paper Co., 7s 1927	97	...
Gilbert Paper Co., 6½s 1923-29	100	102*
Hammermill Paper Co., 6s 1930-39	98	101
Hummell, Ross Film Corp., 7s 1925	90	...
Jessup & Moore Paper Co., 6s 1939	75	78
Kenmore Pulp and Paper Co., 6s 1937	89	91*
Lake Superior Pulp and Paper, 6s 1941	102	...
Mattagami Pulp and Paper 1st, Montreal, 6s, 1937	30	40
Marinette & Menominee, 7½s 1936	104	107
Mead Pulp and Paper, 7s 1925-29	96	99
Mengel Company, 7s 1934	100	103
National Paper and Type, 6s 1947	96	99*
Oswego Falls Corp., 8s 1942	101	...
Orono Pulp and Paper, 5s 1941	93	96*
Orono Pulp and Paper, 6s 1943	97	100*
Oxford Paper Co., 6s 1947	98	...
Paterson Parchment Paper, 5½s 1927-28	...	100
Paterson Parchment, 6s 1938	96	99
Parker, Young Co., 6½s 1944	92	96
Price Bros. & Co., Ltd., Montreal, 6s 1943	98	100
Provincial Paper Mills, Ltd., Montreal, 6s 1940	97	...
Riordan Co., Series A, Montreal, 8s 1940	87	90
Riordan Pulp and Paper, Ltd., Montreal, 6s 1929	22	28
River Raisin Paper, 8s 1936	102	105
St. Regis Paper, 6½s, 1929-35	97	102
Smith (Howard) Paper Mills, Montreal, 7s 1941	90	93
Smith (Howard) Paper Mills, Montreal, 6s 1934	93	...
St. Croix Paper, 5s 1923-37	95	...
Stevens & Thomson Paper, 6s 1942	86	90
Spanish River Pulp and Paper, Montreal, 6s 1931	105	...
Spanish River Pulp and Paper, Montreal, Gen 6s 1941	105	...
Ticonderoga Pulp and Paper Co., 6s, 1940	91	95
Whittaker Paper, Cincinnati, 7s 1942	96	99
Watab Paper Co., 6½s 1942	98	101
Waterway Paper Products, 7s 1924-27	95	100
Wayagamack Pulp and Paper, Ltd., Montreal, 6s 1951	84	88*

STOCKS	BID	ASKED
Abitibi Power and Paper, Com	62	63
Abitibi Power and Paper, Pfd	98½	103
Advance Bag and Paper, Com	8	12*
Advance Bag and Paper, Pfd	70	75*
Beaver Board, Com	5	8
Beaver Board, Pfd	38	42
Bryant Paper, Cap	9	...
Brompton Pulp and Paper, Cap	32	33
Crown Williamette, Com	93	98*
Crown Williamette, 7% A, Pfd	98	SW
Donnaconna Paper, Pfd	95	100
Great Northern Paper, Cap	220	250
Jessup & Moors Paper, Pfd	77	80
International Paper Co., Com	50	53
International Paper Co., Pfd	71	73
Laurentide Co., Ltd., Cap	82	84
Mengel Company, Com	30	33
Mengel Company, Pfd	72*	76
National Paper and Type, Com	70*	75
National Paper and Type, Pfd	85	90
Oxford Paper Co., Pfd	93	95
Provincial Paper Co., Com	90	100
Provincial Paper Co., Pfd	95	98
Price Brothers, Cap	36	38
St. Maurice Paper Co., Cap	83	88
St. Regis Paper Co., Cap	24	27
Smith (Howard) Paper Co., Ltd., Com	29	31
Smith (Howard) Paper Co., Ltd., Pfd	80*	84
Spanish River Pulp and Paper, Com	101	103
Spanish River Pulp and Paper, Pfd	111	113
Ticonderoga Pulp and Paper, Cap	145	...
Union Bag and Paper, Cap	48	50
United Paper Board, Cap	52	55*
West Virginia Pulp and Paper, Cap	54	57*
Whittaker Paper, Com	10	20
Whittaker Paper, Pfd	37	42
Zellerbach Paper, Pfd	98	100*

*Nominal.

Paper

F. o. b. Mill

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@30.00
Superfine	14.00	@30.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.65	@ 3.90
Rolls, transit	3.75	@ 4.25
Sheets	4.15	@ 4.40
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	7.00	@ 9.75
M. F.	6.50	@ 8.75
Coated and Enamel	9.00	@15.00
Lithograph	9.00	@14.00
Tissues—		
White No. 1	.75	@ .90
White No. 2	.70	@ .80
Colored	1.05	@ 1.90
Anti-Tarnish	1.40	@ 2.30
Kraft	.90	@ 1.00
Manila	.75	@ .80
Kraft—		
No. 1 Domestic	5.50	@ 6.25
No. 2 Domestic	5.00	@ 5.75
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.00	@
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.00
Fibre Papers—		
No. 1 Fibre	5.50	@ 5.75
No. 2 Fibre	4.75	@ 5.25
Common Bogus	2.50	@ 2.75
S. Screening	3.25	@ 3.75
Card Middler	4.00	@ 5.00
Boards—per ton—		
News	37.50	@42.50
Straw	50.00	@55.00
Chip	35.00	@40.00
Binders' Boards	75.00	@80.00
Sgl. Mla. Ll. Chip	55.00	@62.50
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.80	@ .90
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	12.00	@15.00
Bleached, basis 20 lbs.	14.00	@17.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	35.00	@40.00

(F. o. b. Mill)

No. 1 Domestic	27.50	@34.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	3.75	@ 4.50
Easy Bleaching	2.90	@ 3.20
No. 1 strong unbleached	2.75	@ 3.25
No. 2 strong unbleached	2.50	@ 2.75
No. 1 Kraft	2.75	@ 3.00
Sulphate—		
Bleached	3.50	@ 3.65

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.45	@ 4.50
Easy Bleaching Sulphite	2.70	@ 3.25
News Sulphite	2.45	@ 2.75
Mitscherlich	3.20	@ 3.75
Kraft (Domestic)	2.70	@ 3.50
Soda Bleached	3.90	@ 4.10

Domestic Rags

New Rags

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	15.00	@16.00
New White, No. 2	9.50	@11.00
Silesias No. 1	10.50	@11.50
New Unbleached	13.50	@14.50
Washables	6.50	@ 9.25
Fancy	10.00	@10.50
Blue Overall	10.50	@11.50
New Blue	7.50	@ 8.50
New Black Soft	5.75	@ 6.20
Mixed Khaki Cuttings	5.50	@ 6.00
Pink Corset Cuttings	10.50	@11.00
Pink Muslin	10.25	@10.75
New Light Seconds	3.25	@ 3.50
O. D. Khaki Cuttings	5.50	@ 6.50
Men's Corduroy	6.00	@ 6.75
New Black Mixed	3.75	@ 4.00

Old Rags

White, No. 1—		
Repacked	8.00	@ 9.00
Miscellaneous	6.50	@ 7.00
White, No. 2—		
Repacked	4.75	@ 5.25
Miscellaneous	4.00	@ 4.50
St. Soiled, White	3.25	@ 3.75
Thirds and Blues—		
Repacked	4.25	@ 4.50
Miscellaneous	3.25	@ 3.50
Black Stockings	4.00	@ 4.50
Roofing Rags—		
Cloth Strippings	3.15	@ 3.25
No. 1	3.15	@ 3.25
No. 2	3.05	@ 3.15
No. 3	2.00	@ 2.25
No. 4	2.75	@ 2.85
No. 5A	1.80	@ 1.50

Foreign Rags

New Light Silesias	9.50	@10.50
Light Flannelettes	9.75	@10.50
Unbl'chd Cottons	13.00	@14.00
New White Cuttings	14.00	@15.00
New Light Oxfords	9.50	@10.25
New Light Prints	9.00	@10.00
New Mixed Cuttings	3.75	@ 4.50
New Dark Cuttings	3.00	@ 3.50
No. 1 White Linens	10.00	@11.00
No. 2 White Linens	7.00	@ 8.00
No. 3 White Linens	6.00	@ 6.50
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.50	@ 5.00
Ord. Light Prints	3.75	@ 4.25
Med. Light Prints	3.75	@ 4.25
Dutch Blue Cottons	4.50	@ 5.00
Ger. Blue Cottons	4.00	@ 4.25
Ger. Blue Linens	4.50	@ 5.00
Checks and Blues	3.50	@ 3.75
Linsay Garments	3.25	@ 3.50
Dark Cottons	3.15	@ 3.30
Shoppery	3.00	@ 3.10
French Blues	4.25	@ 4.75

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	3.15	@ 3.30
Domestic	3.25	@ 3.40
Wool, Tares, light	2.90	@ 3.00
Wood, Tares, heavy	3.00	@ 3.15
Bright Bagging	2.90	@ 3.05
Sound Bagging	2.40	@ 2.50
Manila Rope—		
Foreign	6.25	@ 6.50
Domestic	6.50	@ 7.00
New Bu. Cut	3.50	@ 4.00
Hessian Jute Threads—		
Foreign	4.00	@ 4.25
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	3.60	@ 3.90
Hard, White, No. 2	3.25	@ 3.50
Soft, White, No. 1	2.80	@ 3.00
Flat Stock—		
Stitchless	1.45	@ 1.55
Overissue Mag.	1.45	@ 1.55
Solid Flat Book	1.40	@ 1.50
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	1.80	@ 1.90
Ledger Stock	1.60	@ 1.70
New B. B. Chips	.50	@ .55
Manilas—		
New Env. Cut	2.45	@ 2.60
New Cut. No. 1	1.75	@ 2.00
Extra No. 1 old	1.40	@ 1.50
Print	1.20	@ 1.30
Container Board	1.00	@ 1.10
Bogus Wrapper	1.00	@ 1.10
Old Krafts Machine compressed bales	2.05	@ 2.15
News—		
No. 1 White News	1.85	@ 1.95
Strictly Overissue	1.05	@ 1.15
Strictly Folded	.95	@ 1.05
No. 1 Mixed Paper	.65	@ .75
Common Paper	.50	@ .55

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.43	@ .48
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.51	@ .61

Finished Jute—			
Dark, 18 basis	.30	@	.31
Light, 18 basis	.28	@	.30
Jute Wrapping, 3-6 Ply—			
No. 1	.20	@	.23
No. 2	.18	@	.20
Tube Rope—			
4-ply and larger	.15	@	.17
Fine Tube Yarn—			
5-ply and larger	.20	@	.28
4-ply	.21	@	.24
3-ply	.22	@	.25
Unfinished India—			
Basis	.14	@	.15
Paper Makers' Twine			
Balls	.12	@	.13
Box Twine, 2-3 ply	.14	@	.15
Jute Rope	.20	@	.40
Amer. Hemp, 6	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis	.14	@	.16
No. 2 Basis	.10	@	.12
Sisal-Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

CHICAGO

Paper

F. o. b. Mill

All Rag Bond	35	@	40
No. 1 Rag Bond	25	@	35
No. 2 Rag Bond	14	@	25
Water Marked Sulphite	9	@	12
Sulphite Bond	7	@	10¾
Sulphite Ledger	9½	@	12
Superfine Writing	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book	5½	@	7½
No. 1 S. & S. C. Book	6½	@	7¾
Coated Book	8	@	10
Coated Label	8	@	10
News—Rolls, mill	3¾	@	4½
News—Sheets, mill	4	@	4¾
No. 1 Manila	4½	@	5½
No. 1 Fibre	4¼	@	5¼
No. 2 Manila	3½	@	4¼
Butchers' Manila	3¾	@	4¼
No. 1 Kraft	5¼	@	6¼
No. 2 Kraft	4¾	@	5¾
Wood Tag Boards	4¼	@	6
Sulphite Screenings	2½	@	2¾
Manila Tissue, 24x36 sheet	7	@	7¼
White Tissue, 20x30 sheet	7	@	7¼
Boards, per ton—			
Plain Chip	47.50	@	50.00
Solid News	50.00	@	52.50
Manila Line Chip	52.50	@	55.00
Container Lined—			
85 Test	67.50	@	70.00
100 Test	72.50	@	75.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.25	@	3.55
White Envel. Cuttings	3.40	@	3.50
No. 1 Soft Shav.	3.00	@	3.05
No. 1 Mixed	1.75	@	1.85
No. 2 Mixed	1.65	@	1.70
Ledger and Writings	1.60	@	1.70
Solid Books	1.55	@	1.60
No. 1 Light Books	1.15	@	1.20
Blanks	2.10	@	2.15
Ex. No. 1 Manila	2.60	@	2.65
Manila Envelope Cuttings	2.75	@	—
Folded News (overissue)	.95	@	1.00
Old Newspapers—			
No. 1	.90	@	.95
No. 2	.85	@	.90
Mixed Papers—			
No. 1	.77½	@	.80
No. 2	.70	@	.72½
Straw Clippings	.85	@	—
Binders' Clippings	.80	@	
Kraft	2.30	@	2.35
New Kraft Cuts	2.70	@	2.75
Roofing Stock, f. o. b. Chicago, Net Cash—			
No. 1	$50.00	@	—
No. 2	48.00	@	—
No. 3	46.00	@	—
No. 4	46.00	@	—

BOSTON

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag Content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.07½	@	.14
Rag Content	.16	@	.33½
All Rag	.36½	@	.51
Writings	.08½	@	.20
Superfines	.20	@	.48
News	.04	@	.06½
Book, M. F.	.06½	@	.10¾
Book, Super	.07½	@	.11
Book, Coated	.09½	@	.20
Coated Litho.	.10	@	.15
Label	.09½	@	.15
Jute Manila No. 1	.12	@	.13
Manila, Sul. No. 1	.05	@	.06
Manila, Sul. No. 2	.03¾	@	.04½
No. 1 Kraft	.06½	@	.06½
No. 2 Kraft	.05¾	@	.05½
Common Rogus	.03½	@	.04
Straw Board	50.00	@	55.00
News Board	47.50	@	50.00
Chip Board	45.00	@	47.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	75.00	@	85.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	4.25
White Blank News	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White	3.10	@	3.25
No. 2 Soft White	2.25	@	2.50
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock	2.00	@	2.25
Writing Paper	—	@	1.70
No. 1 Books, Heavy	1.60	@	1.80
No. 1 Books, Light	1.40	@	1.50
No. 1 New Manila	2.50	@	2.60
No. 1 Old Manila	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.00	@	2.25
Overissue News	1.00	@	1.20
Old Newspapers	.90	@	1.00
No. 1 Mixed Paper	.70	@	.75
Box Board, Chip	.70	@	.75

Bagging

Price f. o. b. Boston

Gunny No. 1—			
Foreign	1.12½	@	2.00
Domestic	2.00	@	2.12½
Manila Rope	6.00	@	6.50
Mixed Rope	1.50	@	1.62½
Scrap Burlaps	1.25	@	1.50
Wool Tares, heavy	2.00	@	2.13
Mixed Strings	1.50	@	1.62½
New Burlap Cuttings	2.00	@	2.25

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.13½	@	.14
Silesias, No. 1	.09	@	.09½
New Unbleached	.12½	@	.13
Washable	.06	@	.06½
Fancy	.07	@	.07¼
Cottons—according to grades, Blue Overall	.09½	@	.10
New Blue	.05½	@	.06
New Black, soft	.06	@	.06¾
Khaki Cuttings	.05½	@	.06
Corduroy	.04	@	.04½
New Canvas	.10½	@	.11

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1—			
Repacked	7.50	@	8.00
Miscellaneous	6.50	@	7.00
White No. 2—			
Repacked	5.50	@	6.00
Miscellaneous	4.75	@	5.50
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous	3.00	@	3.25
Roofing Stock—			
No. 1	2.25	@	2.37
No. 2	2.12½	@	2.25
No. 3	1.50	@	1.75
No. 4	1.15	@	1.20

PHILADELPHIA

Paper

Bonds	.09	@	.53
Ledgers	.13½	@	.40
Writings—			
Superfine	.13½	@	.20
Extra fine	.12	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.08	@	.11
Book, S. S. & C.	.09¼	@	.12½
Book, Coated	.11½	@	.20
Coated Lithograph.	.10	@	.13
Label	.10	@	.13
News	.04¼	@	.05
No. 1 Jute Manila	.12	@	.13
Manila Sul., No. 1	.07	@	.10
Manila No. 2	.06	@	.08
No. 2 Kraft	.05	@	.08
No. 1 Kraft	.07	@	.08
Common Bogus	.03½	@	.04
Straw Board	55.00	@	60.00
News Board	42.50	@	—
Chip Board	40.00	@	42.50
Wood Pulp Board (Carload Lots)	2.75	@	3.00
Binder Boards—			
Per ton	70.00	@	75.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1-ply (per roll)	1.70	@	1.80
Best Tarred, 2-ply (per roll)	1.50	@	1.60
Best Tarred, 3-ply	2.00	@	2.10

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	1.75	@	1.85
Domestic	1.60	@	1.70
Manila Rope	5.00	@	5.50
Sisal Rope	2.50	@	—
Mixed Rope	1.25	@	—
Scrap Burlaps	1.15	@	1.20
Wool Tares, heavy	2.00	@	2.13
Mixed Strings	1.00	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.75	@	—

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.75	@	3.80
No. 2 Hard White	3.25	@	3.40
No. 1 Soft White	2.75	@	3.00
No. 2 Soft White	2.00	@	2.25
No. 1 Mixed	2.00	@	—
No. 2 Mixed	1.25	@	1.30
Solid Ledger Stock	1.75	@	1.90
Writing Paper	1.50	@	1.75
No. 1 Books, heavy	1.45	@	1.60
No. 2 Books, light	1.15	@	1.25
No. 1 New Manila	2.40	@	2.50
No. 1 Old Manila	1.50	@	1.75
Container Manila	1.10	@	1.15
Old Kraft	2.00	@	2.25
Overissue News	1.05	@	1.10
Old Newspaper	.65	@	.70
No. 1 Mixed Paper	.75	@	.80
Common Paper	.60	@	.70
Straw Board, Chip	.65	@	.70
Binders Bd., Chip	.65	@	.70

Domestic Rags—New.
Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13	@	.14
New White, No. 2	.07	@	—
Silesias, No. 1	.08	@	.08¼
New Unbleached	.11¼	@	.11½
Washable	.05½	@	.05¾
Fancy	.07	@	.07¼
Cottons—according to grades—			
Blue Overall	.08¾	@	.09
New Blue	.03¾	@	—
New Black Soft	.06	@	.06¾
New Light Seconds	.03½	@	.03¾
Khaki Cuttings	.05½	@	.06
Corduroy	.04	@	.04½
New Canvas	.09	@	.09½
New Black Mixed	.05	@	.05¼
Old White, No. 1—			
Repacked	6.75	@	7.00
Miscellaneous	6.25	@	6.50
White, No. 2—			
Repacked	.05	@	.05½
Miscellaneous	.04¾	@	.05⅛
Thirds and Blues—			
Repacked	3.40	@	3.60
Miscellaneous	3.15	@	3.25
Black Stockings	4.00	@	4.25
Roofing Stock—			
No. 1	2.30	@	2.40
No. 2	2.20	@	2.30
No. 3	1.25	@	1.35
No. 4	2.10	@	2.20
No. 5A	1.40	@	—
B	1.25		nominal
C	1.15		nominal

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.11	@	.12½
Light tinted	.12	@	.13½
Dark tinted	.13½	@	.15
Ledgers (sulphite)	—	@	.13
Writing	.09½	@	.12
News, f. o. b. Mills—			
Rolls (carloads)	3.65	@	—
Sheets (carloads)	—	@	4.50
Sheets (2 tons or over)	—	@	4.75
Book—			
No. 1 M. F. (carloads)	9.25	@	—
No. 2 M. F. (carloads)	8.25	@	—
No. 3 M. F. (carloads)	7.75	@	—
No. 1 S. C. (carloads)	9.75	@	—
No. 2 S. C. (carloads)	8.75	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rag	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	30.00	@	32.00
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	50.00	@	55.00
Sulphite, bleached	80.00	@	—
Sulphate	65.00	@	70.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. Cut.	3.60	@	—
Soft White Book shavings	3.00	@	—
White Blk. News	1.80	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.50	@	—
Light and Crumpled Book Stock	1.35	@	—
Ledgers and Writings	1.75	@	—
Solid Ledgers	1.75	@	—
Manilas—			
New Manila Cut.	—	@	1.60
Printed Manilas	1.20	@	—
Kraft	2.05	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News	.90	@	—
No. 1 Mixed Papers	.70	@	—
Domestic Rags—			
Price to mills, f. o. b. Toronto			
	Per lb.		
No. 1 White shirt cuttings	.15	@	.15¼
No. 2 White shirt cuttings	.07½	@	.08
Fancy shirt cuttings	.09	@	.09½
No. 1 Old Whites	—	@	—
Third and blues	.05½	@	.05¾
	Per cwt.		
Black stockings	.04	@	—
Roofing stock:			
No. 1	2.20	@	—
No. 2	2.10	@	—
Manila rope	.06½	@	.06¾
No. 2	1.55	@	—

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OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, December, 10, 1924.

The paper market is holding its own although there is evidence at every hand that we are close on the heels of the holidays. That fact is having a stimulating effect on some branches while it is proving, as is customary, a wet blanket on others. No one is optimistic enough to expect great things at this time of the year for all business that is not closely tied up to holiday trade naturally suffers when practically everything is sidetracked for Christmas and New Year's. It is very encouraging, however, that the market is now showing a greater spirit of inquiry than for a long time and that buying is broadening out and anticipating more generously the needs of the future. The year that is drawing so near its close has been a peculiar one in many respects and there are good grounds for believing that whatever has been experienced in the way of business famine will be atoned for by a business feast in 1925. There have been so many disappointments during 1924 and the year has so often fallen short of expectations that the paper men will breathe easier and draw a sigh of relief when they start dating their business communications "1925." There is still a great bulk of business waiting to be placed and it is doubtful if much of it will come through until the holidays are over. There may be a slight falling off of business during the next three weeks but it is almost certain that New Year's Day will hardly be over before a notable improvement will be experienced. The sails are apparently all set for a prosperous year for American business in general and, of course, the paper industry may be expected to get its proper proportion of the prosperity.

News demand is very active now. The holiday advertising boom is already holding sway. The large volume of advertising handled by the newspapers thus early indicate that advertisers have not decided on any retrenchment in holiday advertising. The size of the papers will grow from now on and it all means the use of more news print. Whatever slackness may come to the market between now and January 1, news print will not participate in it.

Book papers are also in better demand and much of the improvement can be traced to the coming holidays. The same may be said of boards, wrapping papers and the various paper specialties which find their harvest-time at this season of the year.

Mechanical Pulp

There has been no change during the past week in mechanical pulp conditions. The price remains unchanged, there is a fair demand and the outlook for future business is said to be favorable.

Chemical Pulp

Chemical pulp men continue to feel gratified at conditions in the market. The past week brought no further change in prices than those reported a week ago but more orders are coming in which anticipate future needs through the greater part of 1925. Chemical pulp buyers have ceased to be merely buyers for the present and are apparently optimistic regarding the volume of their requirements for next year.

Old Rope and Bagging

Old rope continues to go forward. The demand is better than it has been and while there is not the scarcity that existed awhile ago there is still a shortage of certain stock and some buyers are not getting their orders filled as promptly as they could wish. The bagging demand is standing pat and no great change is looked for immediately.

Rags

Rags are constantly doing better and the past week was particularly encouraging to the dealers. The market is today in a healthier condition than it has been for some time and should round out the year in good shape.

Waste Paper

The waste paper market is now going through a stage of notable improvement. There is a very generous call for waste paper of the better and lower grades and it is not expected that any reaction to present conditions will come for a long time.

Twine

The holiday demand has been of considerable help to the twine men but even without that conditions are better and the routine demand is coming to life after a long period of disinterestedness.

President Stokes Issues Call

President Henry W. Stokes of the American Paper and Pulp Association has issued his call for the forty-eight annual meeting of the Association which will be held at the Waldorf-Astoria Hotel on February 5.

There will be a business session in the morning at which matters of importance to the industry will be discussed. The President's luncheon will be held at 1 o'clock and the annual banquet will be at night.

Business conditions, industrial and international relations and association activities will be discussed at the business meeting and the banquet will have a program that will be of more than ordinary interest.

Arrangements have been made as usual for special railroad rates. Tickets for the annual dinner will be $10 and there will be no registration charge this year.

F. L. Moore in Westfield River Paper Co.

RUSSELL, Mass., December 8, 1924.—Frank L. Moore, formerly president of the Newton Falls Paper Company and a former president of the American Paper and Pulp Association has purchased a controlling interest in the Westfield River Paper Company and has been made president and general manager of the company.

Karl Becker remains as vice president and sales manager of the company.

The mill will continue to make the same high grade of glassine paper and specialties for which it already has a high repuattion.

P. N. Selvig Paper Co. Incorporates

CAMDEN, N. J., December 8, 1924.—The P. N. Selvig Paper Company, printers' papers and paper specialties, with offices and warehouse at 115 Erie street, has been incorporated under the laws of the state with a capital stock of $100,000.

The officers of the firm are P. N. Selvig, president and general manager; Olaf Anderson, vice-president, and Elise Selvig, secretary and treasurer.

Will Erect Engine House

[FROM OUR REGULAR CORRESPONDENT.]

KALAMAZOO, Mich., November 29, 1924.—The Bradford Paper Company, which purchased the plant at 2,001 Fulford street, recently occupied by the C. G. Spring and Bumper Company, will erect an engine house at the east end of the main structure. The new addition is to be of steel, brick and concrete and will be one story high and 24 by 60 feet in dimension.

Jacobson Engineering Co. Moves

MINNEAPOLIS, Minn., December 8.—Jacobson Engineering Company, Consulting Engineers, specializing in the design and supervision of pulp and paper mills and Hydro-Electric Power Developments, announce the removal of their offices to suite 461 Northwestern National Life Insurance Building, Minneapolis, Minn.

An airplane X-ray view of your plant

If an airplane were to take an X-ray photograph through the roofs of your plant, it would show thousands of items of value—machines, motors, pipes, beams, typewriters, pumps, tools. The picture would show the plant as a whole, but it would fail to give you a complete record of all the "property dollars" represented.

"Where is such and such a machine?" "How long have we had this piece of equipment?" "When will we have to replace that pump?" "Who made these motors?" "How much are those partitions worth?" "What is the lay-out of machinery in Department B?" These and a thousand questions like them are answered accurately, quickly and completely by An American Appraisal.

Values are shown for the complete plant, for each building, for each type of property, for each insurance risk, each department, each plant account, or any other segregation desired.

All totals are supported by detailed, provable values for each unit of property.

An American Appraisal assures accuracy, disinterestedness and provability in property analysis and valuation.

A generation of experience supports its statements of values.

Its recognized superiority has made it the most widely used appraisal.

Send for the booklets U-12, "Property Records—Their Effect on Profit and Loss" and "When Insurance Insures —and When it Doesn't."

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, Dec. 10, 1924.

Now that buyers of chemicals have become satisfied that the probability of lower 1925 prices is vague, buying is becoming a little more liberal and the indications of brighter business almost immediately are more pronounced. The demand during the past week has been a trifle better and confidence is growing that January 1 will find the market in much better shape than it has been for a long time. Schedules have not come through yet on many of the items but there seems to be no justification for the belief that lower prices will be quoted for 1923 and that sooner or later users of chemicals will have to make up their minds to do their buying at the prices which prevail today. There is no question but that much business has been held back in the hope of a better price quotation and, with the passing of this hope, various channels for more business should be opened up with the result of a considerably better demand about the first of the year. It is believed that that betterment has already begun and that it will steadily increase from now on.

BLANC FIXE.—Blanc fixe showed no real improvement in demand during the past week despite the fact that inquiries are more general and indicate an awakening interest. The price is still from $75 to $80 a ton for the powder and from $50 to $55 for the pulp.

BLEACHING POWDER.—Some orders for bleaching powder are now coming in as a result of the recent announcement of the new schedule. It is evident, however, that the bulk of the business is not being placed yet and that the tendency of the big buyers is to hold off until the last minute. It is equally evident that the biggest users, in view of the period of low production which was encountered for some weeks, will not find it necessary to buy to any extent until after the first of the year. The main hitch, of course, is the price. The present quotation is from 1.90 to 2.15 cents a pound.

CAUSTIC SODA.—Contracts for caustic soda are now being booked at the new schedule which is the same as has been in force. The manufacturers are very well satisfied with the manner in which business is coming in and are talking with enthusiasm of the good business which lies at hand in the near future. The price is from 3.10 to 3.15 cents a pound.

CASEIN.—While there has been no appreciable increase in the demand for casein that demand is slightly better and shows an indication of a rapid improvement at an early date. The price is from 10 to 11 cents a pound.

CHINA CLAY.—China clay business is good just now and the demand is very satisfactory. Some of the manufacturers here are interesting themselves in a movement to boost up the tariff as it has been hinted that the British manufacturers are planning to send China clay over here at a price lower than the production cost. The quotation remains at from $16 to $20 a ton for the imported grades and from $12 to $15 a ton for the domestic grades.

CHLORINE.—Chlorine has undergone no change during the past week. The demand remains just about so and the price continues from 4.50 to 7 cents a pound in tanks.

ROSIN.—Rosin also holds just about so. A week ago Saturday it was selling at $6.05 but was coming back all the week until last Saturday when it was selling at $6.25. The price is fluctuating from $6 to $6.25.

SALT CAKE.—Salt cake does not show anything like spirited activity in spite of the fact that there has been a fairly good inquiry for it for some time past. It is still quoted at from $17 to $20 a ton.

SODA ASH.—There has been a fair improvement in the demand for soda ash. Contracts are now being renewed at the new price schedule and a steadily increasing demand is looked for. It is selling at 1.38 cents a pound on a flat basis at the works.

SULPHATE OF ALUMINA.—Conditions remain just about as last week in regard to sulphate of alumina. The manufacturers are all holding to their schedule and buying is of a satisfactory amount. The price is now from 1.40 to 1.45 cents a pound for the commercial grade at the Eastern works and from 2.20 to 2.35 cents a pound for the iron free.

SULPHUR.—Sulphur is moving with its consistent contract regularity and the price continues at from $18 to $19 a ton.

TALC.—Talc continues to improve slowly although it has not yet reached the active place in the market that it should occupy at this time. It is quoted at from $16 to $17 a ton.

PAPER BIDS AND AWARDS

(*Continued from page* 58)

reams) of 21 x 32—36 No. 20, pink sulphite writing paper at 7.75 cents per pound, bids for which were received on November 17.

The R. P. Andrews Paper Company will furnish 25,000 pounds of 19 x 24—38 white MF lithograph paper at 6.59 cents per pound, bids for which were received on November 24.

The Whitaker Paper Company will furnish 35,700 pounds of 21 x 31—102 wood bristol board and 40,000 pounds of wood mellon bristol board in 20 inch rolls at 4.81 cents per pound. The R. P. Andrews Paper Company will furnish 4,350 pounds (300 reams) of 21 x 31—14½ pounds No. 8, onion skin paper at 2.37 cents. Bids for these items were received on November 26.

Reese & Reese has been awarded the contract by the Bureau of Supplies and Accounts of the Navy Department for furnishing 400 reams of 19 x 24 light blue plain blotting paper at $3,356.

The R. P. Andrews Paper Company will furnish 8,000 reams of 8 x 13—5½ pounds white laid mimeograph paper at $184 and D. S. Walton & Co. will furnish 700 reams of brown kraft writing paper at $4,887.75. Bids for these items were received on November 18.

The Government Printing Office has awarded the following paper contracts:

The Whitaker Paper Company will furnish 36,000 pounds (18,000 sheets) of No. 2 quality 25 x 30—No. 25 binders board at 3.1455 cents per pound, bids for which were received on November 24.

The Eureka Specialty Company will furnish 2,300 pounds (100 reams) of 17 x 22—23 pounds white non-curling gummed paper at $3.50 per ream, and the R. P. Andrews Paper Company will furnish 108,000 pounds (2,500 reams) of various sizes No. 20, white sulphite bond paper at 6.95 cents per pound. Bids for these items were received on November 21.

The American Writing Paper Company will furnish 3,150 pounds (100 reams) of 24 x 38—31½ No. 13 light pink manifold bond paper at 18.5 cents per pound and Samuel S. Alcorn will furnish 8,000 pounds (500 reams) of 21 x 32—16 No. 9 canary sulphite manifold paper at 12.4 cents. Reese & Reese will furnish 5,400 pounds (150 reams) of 21 x 32—36 No. 20 yellow sulphite writing paper at 7.85 cents per pound. Bids for these items were received on November 17.

The American Writing Paper Company will furnish 18,000 pounds (150 reams) of No. 1 white bristol board 22½ x 28½—120 at 10.5 cents, and Barton, Duer & Koch will furnish 2,500 pounds of kraft wrapping paper in 36 inch rolls at 5.7 cents. Bids for these items were received on November 14.

Paper Box Men May Confer

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., December 10, 1924.—It is probable that a conference will be held the latter part of this month or the early part of next, of the distributors and consumers of set-up and folding boxes in connection with the simplification program of the industry which is being worked out by the box manufacturers themselves and W. A. Gately on behalf of the Simplified Practice Division of the Department of Commerce.